

ECONOMIC GLOBALISATION : CHALLENGES AND OPPORTUNITIES FOR MOUNTAIN AGRICULTURE*

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I. The Central Issues:

Economic globalisation with primacy to market friendly and market driven processes, provisions and practices, in different contexts is spreading to all countries and regions. Though promoted as means to global growth and prosperity, the process also carries risks besides opportunities for the participants. The participants unprepared for the change are likely to encounter more risks and limited gains in the process. The mountain regions like HK-H and their communities, both due to their specific bio-physical conditions and historical processes affecting (marginalizing) them, fall under the above category. Despite potential and development efforts in the past, these areas have not made substantial progress due to general disregard of the imperatives of specific mountain conditions such as fragility, inaccessibility, marginality, diversity etc. while designing and implementing development interventions. This pattern of neglect may further accentuate during the globalisation era, due to insensitivity of market processes to the imperatives of mountain conditions, while using and integrating mountain areas into wider economic systems. Besides, due to the rapid erosion of traditional cropping strategies of mountain communities in the face of market driven technological and institutional changes; their inability to effectively participate in the same change process; and the reduced economic role and capacity of the state (due to market friendly economic reforms) to extend welfare and development support to them, the communities are likely to be exposed to greater risks and vulnerabilities.

At the same time, one need not look at globalisation-led changes in terms of doom and gloom. The process may also generate several positive opportunities through: harnessing of globally demanded unique niche resources and products characterising mountain areas; and facilitating flow of resources and technologies to overcome largely bio-physically-determined constraints to development of mountain areas.

In the light of the above the primary step in preparing mountain areas (communities implied) for adaptation and benefiting from globalisation process is to identify, analyse and respond (through policy and action) to the risks and opportunities associated with globalisation.

Paper presented at the International Symposium on Mountain Agriculture in the Hindu Kush-Himalayan Region, 21-24 May 2001, Kathmandu.

* The research work reported in this paper has been supported by the MacArthur Foundation

In the following section II (adapted from Jodha 2000a, 2000b) we present a generalised scenario on globalisation and repercussion for mountain areas (communities) in general. This is followed by the discussion (Section III) specifically focussed on mountain agriculture and its limitations in the context of globalisation. We deal with the risks and opportunities associated with globalisation vis a vis mountain agriculture and possible approaches to address them.

II. Globalisation and Fragile Mountain Areas/Communities

Put simply, globalisation process implies adoption of market friendly and market driven economic policies and programmes specifically directed to liberalisation of trade and exchange policies, reorienting development and investment priorities and restructuring of rules and provisions guiding economic transactions as well as roles of different actors in the process, as dictated by the pressures and incentives generated by global economic forces and their legal and institutional instruments (UNDP 1999). Its key implication relevant to present discussion is the fact of according primacy to global perspectives and external concerns even while dealing with the local problems, and in the process disregarding the local perceptions and practices. The mechanisms through which global perspectives could be imposed at micro-level (or in mountains) contexts are commodity trade and associated resource use as well as production patterns, restructuring of property rights and access to resources, dismantling of existing regulatory provisions and their enforcement measures, curtailment of welfare and promotional support for the needy, promotion of preferred technologies as dictated by the market requirements, which in turn are insensitive to both social and environmental concerns (Norgaard 1999). Mountain areas and communities are likely to face a range of problems in the context of above mentioned changes and pressures, which may accentuate the poverty promoting circumstances in mountain areas.

The presumed virtues of globalisation, such as the greater gains of free flow of resources and products ensuring more efficiency as well as greater growth of wealth and welfare at global level; and assigning of the development and distribution business to the forces of market, which through incentive-driven transaction can perform the above business more efficiently etc. (World Bank 1999), have a number of questionable assumption behind them (South Centre 1996). The latter become more clear when the process of globalisation is viewed in the micro-level context, e.g., with reference to mountain areas and their communities.

Globalisation and Mountain Areas

To begin with the process of globalisation tends to create the circumstances which are beyond the control of communities in mountain areas. This may marginalize the nature-endowed economic niche of mountain areas. It would force them to interact as a weaker party in the competitive world market. The process is governed by the driving forces which are not sensitive to the concerns of fragile ecosystems and their residents. Furthermore, the process is so rapid and overpowering that the affected communities have neither sufficient lead time nor required capacities to adapt to rapid changes. If the scattered emerging evidence is any indicator, as a final consequence, globalisation may accentuate the process of exclusion of local communities from the specific resources as well as the pace and pattern of rapid economic transformation in mountain areas. It may further accentuate the inequities associated with highland lowland economic links. In particular the exclusion process may cause loss of local access to resources and promote degradation of resources; marginalisation of well adapted production options and practices, which in the past helped in environmental sustainability and livelihood security of people in mountain areas (Jodha 1999). More specific and interrelated contexts for understanding the potential repercussions of the rapid globalisation process on mountains and their dependent populations are elaborated below.

One can understand the possible consequences of globalisation for mountains by putting its key features in the context of circumstances characterising mountain areas under the categories: (a) visible incompatibilities between the driving forces of globalisation and imperatives of specific features of mountain areas; (b) possibility of globalisation accentuating the negative impacts of past interventions; (c) erosion of practices and provisions imparting resilience and protection to mountain communities (including welfare programmes); (d) loss of niche and access to opportunities; and emerging 'exclusion' process. Based on the above understanding one can also think of (e) indicative approaches or possible ways to influence and adapt to globalisation process in mountain areas. Table 1 summarises the details.

(a) Visible incompatibilities between the driving forces of globalisation and imperatives of specific features of mountain areas

According to Table 1, section (a), the globalisation process is driven by market forces which (guided by short term profitability and external demand) promote selectivity and narrow specialisation in the choice of production activities, encourage indiscriminate resource use intensification, and over extraction of niche opportunities/resources with little concern for their environmental and socio-economic consequences. These orientations are directly in conflict with the imperatives of specific conditions of the mountain areas rooted in their high degree of fragility, marginality, diversity, specific niche etc. These specific features create objective circumstances which favour diversification of resource use and production activities, balancing of intensive and extensive uses of land resources as well as that of production and protection needs facilitating environmental and livelihood security in the fragile ecosystems. Some evidence of the above process at farm level is already visible through, strong focus on selected high value crops, including horticultural crops with intensive use of chemical inputs in hills (Nagpal 1999). The environmental and productivity impacts of monoculture or reduced diversification are also increasingly felt (Jodha 19997c, Kreutzmann 1995). Over extraction of resources (timber, mineral, hydropower, herbs) with their negative side effects is also well recognised.

Table 1: Potential Sources of Adverse Repercussions of Globalisation for Mountain Areas and Communities and Approaches to Adapt to them¹⁾

Potential Sources	Elaborations/Examples
a) Visible incompatibilities between: (i) driving forces of globalisation and (ii) imperatives of specific features of mountain areas (fragility, diversity, etc.)	<p>(i) Market driven selectivity, resource use intensification and over exploitation induced by uncontrolled external demand versus (ii) fragility-marginality induced balancing of intensive and extensive resource uses; diversification of production systems, niche harnessing in response to diversity of resources</p> <p>Consequences: Environmental resource degradation: loss of local resource centred, diversified livelihood security options; increased external dependence</p>
(b) Accentuation of negative side effects of past development interventions under globalisation due to their common elements (approaches, priorities, etc.) with adverse effects on mountain areas	<p>Common elements between the past public interventions and market driven globalisation:</p> <p>(i) Externally conceived, top-down, generalised initiatives (priorities, programmes, investment norms) with little concern for local circumstances and perspectives, and involvement of local communities</p> <p>(ii) Indiscriminate intensification at the cost of diversification of resource use, production systems and livelihood patterns causing resource degradation (e.g., deforestation, landslides, decline in soil fertility, biodiversity)</p> <p>(iii) General indifference to fragile areas/people excepting the high potential pockets creating a dual economy/society; over-extraction of niche opportunities (timber, mineral, hydropower, tourism) in response to external (mainstream economy) needs, with very limited local development</p> <p>Consequences: Environmental degradation and marginalisation of local resource use systems, practices, and knowledge etc., likely to be enhanced due to insensitivity of market to these changes and gradually weakened public sector</p>
(c) Globalisation promoting erosion of provisions and practices imparting protection and resilience to marginal areas/people (including disinvestments in welfare activities)	<p>(i) Traditional adaptation strategies based on diversification, local resource regeneration, collective sharing, recycling, etc., likely to be discarded by new market-driven incentives and approaches to production, resource management activities</p> <p>(ii) Shrinkage of public sector and welfare activities (including subsidies against environmental handicaps, etc.) depriving areas/people from investment and support facilities (except where externally exploitable niche opportunities exist)</p> <p>Consequence: Likely further marginalisation of the bulk of the mountain areas and people</p>
(d) Loss of local resource access and niche-opportunities through the emerging 'exclusion process'	<p>Niche resources/products/services with their comparative advantage (e.g., timber, hydropower, herbs, off-season vegetables, horticulture, minerals, tourism etc.) and their likely loss under globalisation through:</p> <p>(i) Market-driven over extraction/depletion due to uncontrolled external demands</p> <p>(ii) Focus on selective niche, discarding diversity of niche⁴, their traditional usage systems, regenerative practices; indigenous knowledge</p> <p>(iii) Transfer of 'niche' to mainstream prime areas through market-driven incentives, green house technologies, infrastructure and facilities (e.g., honey, mushrooms, flowers produced cheaper and more in green house complexes in the Punjab plains compared to naturally better suited Himachal Pradesh)</p> <p>(iv) Acquisition and control of access to physical resources: forest, water flows, biodiversity parks, tourist attractions by private firms through sale or auction by government, depriving local's access, destroying customary rights and damaging livelihood security systems</p> <p>Consequences: Loss of comparative advantages to fragile areas or access to such gains for local communities</p>
(e) Adapting to globalisation process, possible approaches to loss minimisation	<p>(i) Sharing gains of globalisation through partnership in primary and value adding activities promoted through market; building of technical and organisational capacities using NGOs and other agencies including market agencies to promote the above</p> <p>(ii) Promotion of local ancillary units (run by locals) to feed into final transactions promoted by globalisation; this needs institutional and technical infrastructure and capacity building</p> <p>(iii) Provision for proper valuation of mountain areas resources and compensation for their protection, management by local people for use by external agencies</p> <p>(iv) Enhance sensitivity of market-driven initiatives to environment and local concern to be enforced by international community and national governments</p> <p>(v) All the above steps need local social mobilisation, knowledge generation and advocacy movements; and policy-framework and support</p> <p>Consequences: If above steps are followed, there are chances of influencing the globalisation process and reducing its negative repercussion for mountain areas/people</p>

Table adapted from Jodha (1999).

(b) Accentuation of extractive patterns of resource use

It may sound strange, but as far as mountains are concerned, most of the past public sector determined development interventions and the new market driven processes under globalisation share a number of common elements (Table 1 part 'b'). They include extension of, externally conceived and designed, very much standardised and highly top-down, interventions to mountain areas with little concern for local biophysical and social circumstances; indiscriminate resource use intensification with little concern for fragility and diversity; over extraction of niche resources to meet external demands, imposition of external perspectives, institutions and technologies, marginalising the traditional well adapted systems (Jodha 1998). These elements had been the source of negative side effects of development interventions in the fragile areas (Banskota and Jodha 1992; Ives and Messerli 1989). Globalisation process, governed by external market forces (and being much less sensitive to local circumstances), is likely to further accentuate the above trends. Gradually weakened state, yielding to the incentives and pressure from the globalisation process, would find it increasingly difficult to act against the accentuation process.

Globalisation can further strengthen another feature of the past intervention, namely, coexistence of policy makers' general indifference towards mountain areas and their strong focus on niche-opportunities, which could be exploited for the mainstream economy. The significant niche-resources (timber, hydropower, herbs, minerals, etc.) offer attractive opportunities for the market agencies under globalisation in mountain areas, to exploit the resources with limited benefits for the local populations and the bulk of the gains going to the mainstream economy outside these regions. Due to unequal highland – lowland economic links, this may further increase the already high extent of uncompensated flows of resources and products from mountains to lowlands (Jodha 1997b).

(c) Erosion of practices and provisions (including welfare programmes) imparting resilience, protection and livelihood security.

There are two broad categories of provision and practices which have helped mountain people in the past. First, the people's traditional adaptation strategies to ensure both protection and use of fragile and marginal resources as well as security of their livelihood. There are manifested through diversified and flexible resource use, resource recycling, common property resources and various risk sharing arrangement etc. (Jodha 1998). Despite their decline in the recent decades, these practices are still important part of their economic and social transaction. To this one may add the gains from local harnessing and exchange of petty niche products with comparative advantage to highlands.

Second, despite their limitations, the public policies, through welfare programmes and subsidised development interventions, have been helping the mountain people to compensate for the natural and other handicaps faced by them. Public sector plays a crucial role in these activities.

The above protective provisions and practices are likely to decline due to pressures generated by globalisation (Table 1 part 'c'). Accordingly the traditional practices despite their continued rationale and utility, are likely to be disregarded and marginalised by market driven processes under globalisation. We have already alluded to such traditional practices and arrangements which will have serious backlash from the new short term profitability centred production and resource management systems driven by external tradability and domination of external perspectives. There is a strong possibility of emergence of a dual system consisting of rich and resourceful groups/pockets participating in the change process and the bulk of the poor left with

limited options. This is already visible through emerging gaps between the progressive and transformed areas participating in market processes and the bulk of mountain areas still remaining out of it (Jodha et al. 1992).

Similarly, with rapid shrinkage of public sector and reduced role of the state, changed efficiency and productivity norms for resource allocation and performance assessment under the strong 'market dominated regimes' both welfare and subsidy supported development programmes are likely to be de-emphasised. The consequent disinvestments in welfare and protective programmes is already emphasised under structural adjustment plan (Roy 1997, Reed 1996). Yet communities losing their niche resources and opportunities. This forms a part of 'exclusion process' as elaborated below.

(d) Loss of niche and access to opportunities: an emerging 'exclusion process'

Mountains are endowed with unique environmental and resource characteristics, which have potential for products and services with comparative advantage to these areas. As already mentioned timber, hydropower, off-season vegetables, seed production, valuable herbs, minerals and tourism, etc., constitute niche for mountains. Under the market driven compulsions and facilities, these areas may face a loss of their niche. The process is likely to include the following (Table 1 part 'd').

Production and trade related exclusion: First, the survival and sustainable use of niche resources is closely associated with their protection while using them and interlinking of diversified resource based activities. Both of these conditions may not be satisfied in the face of external market driven pressures and incentives for selective over exploitation and indiscriminate external market driven and incentives for selective over exploitation and indiscriminate resource use of intensification.

Second, globalisation process would bring in new sets of incentives, technologies, infrastructure and support systems, which in response to high demand and profitability would facilitate creation of man made facilities for production of items outside mountain areas, in which the latter hitherto had a comparative advantage. Already, one comes across several developments of this nature. For example, products such as honey, mushroom, flowers, herbs, off-season vegetables and quality crop seed, hitherto produced mainly by mountain areas such as Himachal Pradesh (India) are now produced much cheaper and in a larger quantity under the massive green house facilities in the plains of the Punjab. There is yet another development encouraged by the trade policies which may marginalize the 'niche' opportunities of mountain areas by way of substituting their products by cheaper imports. Thus, man-made facilities (circumstances) tend to increase the comparative advantages to the plains over the nature endowed advantages to mountain areas. Negative impact of (OGL-open general licence for imports in India), on apple from hills is one of the examples (H.R. Sharma 1999).

Resource-related exclusion. The production and trade related 'exclusion process' indicated by the above possibilities is further accentuated by resource based 'exclusion'. This implies alienation of the local communities from their niche resources and associated niche opportunities. Accordingly, in the situations where due to physical or economic inseparability of niche from its spatial location, the marginalisation of niche opportunities of mountains is not possible through production and trade mechanisms. In such situation a different pattern of depriving the local communities from their niche opportunities is emerging in HKH region. This involves external agencies (e.g., private firms, rich individuals, etc.) increasingly acquiring ownership or exclusive access and usage rights to landscapes and specific resources in mountain areas. Disregarding the customary right and local control and access to such

resources and products, large scale areas are given by the state to private companies in the name of resource development and product harnessing. Auctioning or leasing of so called "wastelands", leasing or areas for mining or development of herbal farms, rights to water flows for hydropower, forest for timber, enclosures for parks and biodiversity, prime spots for tourist resorts (and private dwellings for the rich) are some of the examples of changing the ownership and access to resources, seen in different countries of HKH (Jodha 2000b). These developments alienating the local communities from their own resources, are complemented by the well known global initiatives manifested by global treaties and conventions, where enlightened national and international policy makers including donors rather than market forces play the key role in alienating people from their own resources (e.g., in conservation areas, sanctuaries and parks, etc.) (Zerner 1999).

(e) Responding to the changes

Table 1, summarises a few possible approaches to respond to the above negative changes and harnessing the potential opportunities associated with globalisation.

III. Mountain Agriculture in Globalisation Context

Most of the above discussion about globalisation and mountain areas apply to mountain agriculture defined as diversified and interlinked land based activities including annual crops, horticulture, agro-forestry, pastures and other common property resources. In the following discussion we address the issues of specific features or rather weaknesses of mountain agriculture in the context of globalisation induced changes. Before commenting on the above we may respond to some of the often repeated questions on the subject.

(a) Some general questions

Based on the postings during an ICIMOD organised E-Conference on Globalisation and Fragile Mountains the following questions may be listed.

- (i) How globalisation induced/driven provisions and practices designed at macro-level percolates to micro/community levels where bulk of the agricultural activities take place
- (ii) How globalisation process affecting agriculture (and other sectors) differs from the conventional process of commercialisation, marketisation of mountain agriculture specially in the better accessible and progressive areas
- (iii) How could the impacts of globalisation differ between better and relatively less accessible areas as well as between the areas dominated by different major product group (e.g., cereals, fruits, annual crops, perennial crops, etc.)

As a quick response to the above questions we may state the following:

- (1) As stated earlier, put in simple terms globalisation is a market driven and market friendly process that at least in theoretical terms is geared to system integration of national economies into wider global economic through promoting free flowing resources, products and services as determined by market forces and norms. This is encouraged by market friendly state policies such as liberalisation, deregulation, withdrawal of the state from economic activities and the institutional enforcement mechanism in the forms of World Trade Organisation, etc.

Most of the steps (policies, programmes, provision) manifesting the above features are determined at macro-level and rarely directly focussed on micro-level situation. But the

changes in the macro-level provisions directly or indirectly get translated into changes in support systems, incentives, disincentives, property rights and regulations, new links and facilities changed approaches toward well established institutions and practices, etc. It happens both formally and informally. In the light of the above, the components or features of globalisation with immediate relevance to mountain agriculture would take the form of changes reflecting primacy to market and marginalisation of role of state and communities; enhanced role of external factors (demand process, profitability, trade links, etc.) in the local decisions about resource use, product choices, product disposal patterns and usability and efficacy of local institutional arrangements related to agriculture and natural resource use.

- (2) The globalisation (i.e., patterns of above changes) differs from the traditional or existing patterns and processes of commercialisation of mountain agriculture in terms of the above aspects as well as in terms of new institutional and incentive-disincentive patterns, speed of change, new market-determined norms of efficiency and goals of agricultural activities. To reiterate, the process of globalisation gets initiated at macro-levels through country level, market friendly policies/programmes (as pushed by WTO etc.) percolates to micro-level through changes in the provisions, support systems, types of incentives, etc., affecting local activities. Mountain agriculture's ability to adapt to these changes determines, the degree of losses and gains it has to encounter due to globalisation.
- (3) The extent of above changes and their impacts would be much higher in the accessible and relatively commercialised areas, specially those producing the product which have market outside their locations and where market-driven processes have greater chances of altering the existing situation positively or negatively. The inaccessible and isolated area, with predominance of subsistence oriented agriculture may not have immediate effects of globalisation process unless their physical or information accessibility (to link with external areas) is improved. If their accessibility through globalisation induced investments infrastructure etc. is improved, they may get exposed to impacts of globalisation visible in already commercialised, accessible areas. If that results in cheap import based increased external dependence, the local livelihood security might get adversely affected.

(b) Mountain agriculture in competitive context

As stated earlier, according to the advocates, globalisation is a market-driven process for enhanced global growth and prosperity. However, as the recent history of this change shows, the gains of globalisation (i.e., through unrestricted trade and resource flows) are closely and directly linked to international competitiveness and profitability of an activity i.e., mountain agriculture. This in turn at the resource use and production level is linked to high productivity and efficiency, often associated with specialisation and ability to harness economies of scale of production, ensuring generation of tradable surplus. As indicated by Table 2, the mountain conditions such as fragility, marginality, inaccessibility and farmers' 'non-market' oriented traditional measures constrain the fulfilment of the above mentioned conditions on the part of mountain agriculture.

Besides the above production process – level factors, another category of factors which help ensure competitiveness of agriculture relate to post production (e.g., processing, marketing) processes characterising agriculture. The most important among them is infrastructure and access to relevant market for agricultural products. Quite related factor is the equitable and effective external links which ensure fair terms of trade and unconstrained flow of products,

services and resources. This helps translate the high competitiveness of production systems into producers' incomes. However, in mountain areas, again due to inaccessibility, high cost of infrastructure (due to fragility) and poor mobility, traditional isolation and social marginality etc., the above conditions are very rarely satisfied (See Table 1).

In the globalisation context the lack of human capacities for quick response to the emerging changes and generally non-commercial orientation of economic activities in most areas, altering the above negative factors in the short run is quite difficult. Besides, the lack of requisite human skills, capacities, resources and other physical and market constraints, adversely affect the potential gains associated with mountain niche and diversities, which if properly harnessed, can boost the standing of mountain agriculture in the global market. The poor external links involving trade in niche products become inequitable and exploitative. The above picture (indicated by Table 2) presents a general picture. In some accessible areas situation could be better and brighter.

Table 2: The indicative factors/conditions potentially ensuring gains from globalisation and their status in mountain areas

Mountain features constraining or favouring conditions required for gains from globalisation	Indicative conditions/processes promoted by and conducive to gains from globalisation					
	Relating to production process			Relating to post production processes etc.		
Limited Accessibility: distance, semi-closedness, high cost of mobility and operational logistics, low dependability of external support, or supplies	High productivity involving resource use intensification, high input availability and absorption capacity	Specialisation and economies of scale	Tradable surplus generation	Infrastructure facilities, access to markets	Equitable effective external links	Human capacities, quick response to changes
Fragility: vulnerable to degradation with intensity of use, limited low productivity/ pay-offs options	(-) ^a	(-)	(-)	(-)	(-)	(-)
Marginality: limited, low pay- off options; resource scarcities and uncertainties, cut off from the 'mainstream', social vulnerability	(-)	(-)	(-)	(-)	(-)	(-)
Diversity: high location specificity, potential for temporally and spatially inter- linked diversified products/ activities	(+) ^a	(-)	(+)	(-)	(-)	(-)
Niche: potential for numerous, unique products/ activities requiring capacities to harness them	(+)	(+)	(+)	(-)	(-)	(-)
Human adaptation mechanisms: traditional resource management practices-folk agronomy, diversification, recycling, demand rationing, etc.	(-)	(-)		(-)	(-)	(-)

Source: Table adapted from Jodha (1997a) applicable to different development contexts in mountain areas

a (-) and (+) respectively indicate "extremely limited" and "relatively higher degree" of convergence between imperatives of mountain features and the conditions associated with potential gains from globalisation. The situation may differ between more accessible (commercialised) and poorly accessible areas.

(c) Some fundamental risks

Both the proponents and opponents of globalisation agree (though in different measures) that globalisation process carries both risks and opportunities for the participants in the process. But the participant which are ill-equipped to participate in the change process are exposed to greater risks and limited opportunities. Mountain areas (or and mountain agriculture) falls under this category. The first major risk relates to "systemic disintegration" of mountain agriculture.

Systematic disintegration: A genuine and effective participation of mountain economy, its sectors etc., in globalisation process implies their integration into market-based wider economy. However, this integration would also involve some disintegration of existing systems (Table 3).

To illustrate the situation, one can look at mountain agriculture as seasonally, spatially interlinked, diversified land based activities, where output of one activity serves as input for another. Farming-forestry-livestock links is one case in point. However, in the globalisation context (driven by external demand and profitability or competitiveness etc.) the agricultural system as a whole may not have a place in the wider market economy. Instead, the individual products e.g., hill apple or Yak cheese or buckwheat, specific flowers etc. may become important items in external market. Their local demand and use as main or by products as input for other agricultural activities may cease to exist. To enhance their productivity and profitability, their inputs needs (types) may also get out-sourced (e.g., imported feed for dairying). On their own such products may become important, integral parts of wider economy, but as a side effect the same would contribute to the disintegration of existing interlinked production and resource use systems.

Furthermore, the contribution of diversified and interlinked land based activities to local environmental sustainability, resource regeneration and stability would cease to exist. The above mentioned disintegration phenomenon may have far reaching negative implications for indigenous knowledge systems; people's livelihood/food security measures, collective risk sharing and traditional institutional arrangements for resource conservation. All these provisions and practices would be adversely affected by the changes in "trading or transaction" partners and disappearance of local inter-activity functional links due to processes promoted by rapid commercialisation associated with globalisation. The final consequence of such change would be disintegration of community's collective stake in local natural resources and breakdown of social systems – ecosystem links. In the long run, dominance of negative or positive consequences of this "disintegration-reintegration (in to wider economy)" process, would depend on how effectively and wisely mountain areas (communities) are able to adjust to the change. However, unlike in the past, the lead time offered by rapid globalisation for adaptation is too short.

Increased sources and exposure to vulnerabilities: With the globalisation promoted processes the past sources of resilience and defences against vulnerabilities are likely to decline. Diversification of agriculture an age-old measure to reduce risk, collective institutional arrangements to share risks are two examples of provisions likely to be adversely affected by globalisation. To this, one can add (already alluded) fact of reduced state support to mountain agriculture through R & D, infrastructure, welfare and a number of subsidies because of marginalisation of public sector under globalisation process (Jodha 2001).

Erosion of comparative advantage: As already discussed under the beginning, mountain areas and agriculture are losing their niche opportunities due to specific trade policies and the production processes supported by investment and technologies (under global arrangements) in

plains to produce products hither to confined to mountain areas. Off season vegetable is one case in point.

(d) Adaptation strategies

The mountain agriculture's chances of having negative impacts of globalisation are directly linked to its degree of unpreparedness to minimise the risks and harness new opportunities. To enhance the capacity to adjust to the new challenges and opportunities a few tentative steps are indicated under Table 4. Accordingly, clearer understanding of sources and processes of risks and opportunities (differentiated for diversified situations of better and poor accessibility of areas) is the first step. The subsequent steps could be broadly focussed on key constraints indicated by Table 3. Hence, focus on enhancing productivity and competitiveness of mountain agriculture; enhancing man-made support systems to complement nature-endowed unique niche opportunities in mountain areas; building local capacities to respond to new changes are some of the important steps. Besides, there has to be some arrangements to secure proper pricing and compensation for environmental services provided by (as international public goods e.g., biodiversity, fresh water, usable herbs, etc.) mountain regions, which have roots in natural resource usage/management systems followed by the communities. A systematic research effort can help identify operational steps in these areas.

Table 3: Globalisation and Mountain Agriculture Possible Negative Repercussions^(a)

Risks	Explanations
Inherent limitations of mountain agriculture to effectively compete in the globalised market	Primacy of biophysical conditions (constraints), limited man made support systems to make mountain agriculture acquire high productivity, market determined efficiency, profitability and competitiveness; market does not recognise holistic, diversified, sustainability promoting contributions of mountain agriculture
Breakdown of systematic integrity of mountain agriculture; decline of social system-ecosystem links	Based on profitability, external demand/utility, etc., globalisation tends to favour individual components of agricultural system (in terms of their external "input-sourcing" and output disposal systems) and in the process eliminate their internal links in the context of mountain agriculture as an integrated and diversified resource use and production system with well recognised social and ecological functions (e.g., decline of farming-forestry-livestock linkages with shifts in their input sourcing/output disposal channel/destinations)
Increased sources and exposure to vulnerabilities with rising primacy of market-driven processes/practices	(i) Decline of agricultural diversification, collective risk sharing arrangements, customary rights and resource access; (ii) withdrawal of public sector support for welfare and development, (iii) increasing role and domination of external perspectives in local situation (investment/ technologies etc.) and (iv) lack of skills, capabilities, resources of mountain communities to quickly adapt to the change, enhancing their risks and vulnerabilities
Erosion of mountain agriculture's, niche products/ services/opportunities with comparative advantage	Through (i) unrestricted trade policies; (ii) declining public sector support, (iii) increasing possibilities of mountain products available from plains (due to new technologies and investments) largely nature-endowed comparative advantage to mountain products is declining fast (due to external competition)

- (a) The following actual/potential changes will differ between accessible/progressive areas and less accessible ones. Some of these changes have been observed in HK-H region during the exploratory work on the subject supported by MacArthur Foundation.

Table 4: Globalisation and Mountain Agriculture Potential Opportunities and Strategies

Potential Opportunities/ Strategies	Explanations
Basic strategy: understand challenges and opportunities and identify/promote response options	(i) Focus on: differential impacts of globalisation due to mountain diversities (e.g., accessibility wise different area); information and understanding of processes of impacts (see Table 3) to help design differentiated responses; (iii) combination of general and specific responses
Focus on enhanced productivity, efficiency and competitiveness of mountain agriculture/products	(i) Explore, promote market opportunities for exclusive mountain products such as herbs, flowers, fruits, etc; (ii) focus on man-made support systems to complement (now eroding) nature-endowed niche opportunities in mountains
Man-made support systems, infrastructure to reduce the biophysical constraints due to fragility, inaccessibility, marginality, etc. and enhance equitable external links of mountain areas.	Increased investment and relevant technologies for mountain agriculture and mountain areas in general which help ensure high productivity without resource degradation; use of information technologies as measure to reduce impacts of inaccessibility; productive use of fragile and marginal land resources, value adding activities as part of rural enterprises
Local capacity building to equip mountain communities to effectively adapt to changes	Lack of skills, resources, awareness, etc. being major factor constraining communities to effectively respond to new challenges, should get high priority in equipping mountain areas for the globalisation process; external equitable links. Promotion of high value adding off-farm activities etc are another priority areas to be focussed
Pricing and compensation for environmental services offered/managed by mountain areas/communities	Mountain areas produce several international public goods (e.g., rich biodiversity, unique usable herbs, fresh water, nutrition flows and products for downstream through conservation sensitive resource use systems of communities. They should be recognised and compensated for, to enhance resource flows to mountain areas.

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