

Pro poor honey value chain development for inclusive growth in Hindu Kush Himalayan region: Strengthening horizontal and vertical linkages

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Abstract

The prospective of value chain in the mountains has not been researched very much, as mountains value chain are slightly different then the commercial value chain: which needs to be competitive in the market. Mountains with its specificities: inaccessibility, diversity, marginality and fragility (Hoermann et al 2010, Jodha 1992); needs to be looked at sensitively and compassionately to change these pre conditions in favour of the poor to enter into the dynamic global markets. Mainstreaming poor and landless in the mountain value chain is still a bigger challenge since they faces mountain specificities with higher magnitude along with other pre conditions: biggest one being societal barriers to penetrate into the market and limited negotiation skills. This article focuses on mainstreaming marginalized people in Honey Value Chain in Hindu Kush Himalayan (HKH) region.

The major research question for this study is how horizontal and vertical linkages will encourage participation of the poor farmers for inclusive growth in the honey value chain ensuring improved bargaining power and better linkages to the markets in HKH region.

The research framework is based on value chain development approach. A value chain is a sequence of related business activities (functions) from the provision of specific inputs for a particular product to primary production, processing, sales and distribution, to final consumption. It systematically takes all steps of a production process into account, analyzes the links and information flows within the chain and reveals the strengths and weaknesses in the process. From institutional perspective, value chain can be defined as the organisational arrangements linking and coordinating the producers, processors, traders, and distributors who perform these functions. According to Kaplinski and Morris (2003) value chain describes the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers and final disposal after use.

Honey is the sector that has been considered for research. The Honey is high value low volume product, non perishable as it can be stored for few days or months. Beekeeping does not need acres of land and a landless people can also opt it for their livelihood. In mountains, most of the bee farmers of the HKH region belong to the poorer sections of society. They keep only few colonies of bees and/ or collect small quantities of honey from the wild nests of bees, which mostly remain outside the commercial value chain and value addition, thus fetching them the lowest price. There is a need to ensure participation of the poor in the commercial value chain in order to benefit from the age old traditional beekeeping which is practiced and perceived as 'a hobby', or as 'a sideline activity'(Bradbear 2009).

A strong focus in collaboration and coordination through horizontal and vertical integration of the small beekeepers can be sources of valuable strength to countless numbers of mountain rural people's livelihoods. Rather than just a 'hobby', beekeeping can be seen as an important occupation in the HKH region having advantage on economies of scope as well as scale after collaboration. It also shows increase in bargaining power as well as quality assurance at the production end.

This research tries to prove that in rural communities where access to income is limited, small scale commercial beekeeping can contribute significantly to livelihood security if the collaboration among the beekeepers as well as the chain actors at various levels is

strengthened. Due to marginal/small landholding, rain fed condition and low access to market, farmers struggle most of the time to reach to the market and if at all they reach, they fail to achieve the economy of scale. Therefore pro poor mountain specific value chain approach concentrates on strengthening Self Help Groups(SHG)/cooperatives and developing community institutions, building their capacity to take livelihood decisions and providing a range of support services and linkages.

The research paper is based on primary and secondary data. It is based on the pilot project carried out since 2010 to 2012 in Kishoregonj district of Bangladesh, Alital district of Nepal, and Chitral district of Pakistan. This research project under Austrian Development Agency (ADA) intended to provide innovative livelihood options to create or enhance the livelihood of the farmers through the pro poor value chain concept by analysing actors in the chain identifying leverage points in order to make inclusive growth by encouraging participation of the poor farmer in the commercial value chain. Data were collected through 50 in-depth interviews of beekeepers and 20 in-depth interviews with beekeeping enterprises in each country, 6 focus group discussions with women and men farmers involved in the value chain in each county. Secondary information was generated mainly through extensive literature review on livelihood issues of value chain in mountain contexts comprised both published and unpublished reports by the government, non government, and other local level stakeholders. Further analysis of the data and comprehensive discussion on the base of research question will be needed. Local beekeepers should be contacted and interviewed to solicit information based on this research question.

The major finding of the study will be on improving livelihood of the poor by strengthening their bargaining power to cater to the large demand (economy of scale) of the buyer it also provided employment to many farmers. The major findings will also concentrate on how feasible it is for the poor farmers to take up beekeeping in a commercial way, what is the investment and return on investment scenario and where this money from beekeeping has been utilized and how it helps in inclusive growth of the economy in the mountain context.

Introduction

The high value product sectors in the Hindu Kush Himalayas (HKH) suffer from a multitude of constraints and prohibit mountain people from adequately benefiting from the product they collect and produce. Earlier studies conducted by ICIMOD showed that the majority of the population of the HKH depends on subsistence agriculture and natural resource for its livelihood (ICIMOD 2013, Jodha 1992). About 90% of the farmers in mountainous areas depend on marginal and small land holdings, where they typically cultivate less than one hectare per household. Agriculture in the mountain areas is in general unable to compete with plains agriculture in producing food grains and staples on a large scale for mass market, therefore people have to look for better options of high value low volume products for their livelihood.

There are tremendous opportunities in mountains areas. Mountain people, even though excluded and cut off from the urban world and modernisation, have skills and knowledge, which if properly used can create a win-win situation for both upstream and downstream actors. Therefore, it is important to select a value chain that makes mountain people do the same thing, but differently, and with more knowledge about the products and services that they have and understanding of how, and in what form, end markets want to see mountain products. The focus of value chain interventions should be on products for which disadvantaged groups have a comparative advantage. These include products involving traditional knowledge or that promote their distinct culture, which require little investment and external inputs, are non-perishable, and have a short life cycle.

Beekeeping and honey production can be one of such high value product which offers useful opportunity for poor and landless farmers to gain income as it requires minimal start up investment; can be carried out in small space close to the house and generally yield profit within the first year of operation. Beekeeping and honey production are environmentally friendly activities and benefits the mountain people in two ways: an increase in the number of managed and feral honey bee colonies increases honey production which they can sell as high value low volume product which has a shelf life of more than a year; secondly bees supports and facilitates gene flow system and helps the environment at different tropic level to improve diversity and productivity (ICIMOD 2013). Also beekeeping has been age old practice of RMCs implemented by the rural population in the mountains. The indigenous species *Apis cerana* is domesticated and kept in traditional log bee hives or in the wall of house for many years and this technique of beekeeping has been handed from generation to generation. Though *Apis mellifera* is gaining popularity as the production of honey is higher, this study focuses on *Apis cerana* as it is an important source of income and livelihoods for poorer section of the society with little or no agricultural land and very little option for income generation. The table shows comparative advantages of *Apis cerana* beekeeping over *Apis mellifera* in mountain areas.

Table 1: Comparative advantages of *Apis cerana* beekeeping over *Apis mellifera* in mountain areas

Parameters	<i>Apis cerana</i> (Native bee)	<i>Apis mellifera</i> (Exotic bee)
Initial investment	Very low	High
Colony management costs	Negligible	High

Risk involved	Low	High
Potential of stationary beekeeping	Highly suitable	Not profitable
Scale of beekeeping	Profitable even when operated at a small scale. It is most suitable for poor beekeepers operating in remote mountain areas	Profitable only when operated at commercial scale. It is most appropriate for commercial farmers from accessible areas
Pollination of early flowering mountain crops	More efficient	Less suitable, colony strengths low during early in the season
Indigenous knowledge	Exists	Nil
Susceptibility to mites and predators	Resistant	Susceptible
Eco-services	High	Low
Niche value	High – can be sold as premium product	Low- has to compete in global market

Source: Joshi et al. 2002

There is a need to ensure participation of the poor in the commercial value chain in order to benefit from the age old traditional beekeeping which is practiced and perceived as ‘a hobby’, or as ‘a sideline activity’ (Bradbear 2009). The participation becomes even more challenging in the mountains where farmers - mostly small and marginal - live in particularly harsh and fragile environments; they are exposed to extreme climate stresses and natural disasters (landslides and floods), and are far from relief or access to government and other assistance, as well as the conveniences of modern life. These disadvantages make it difficult for poor mountain people to be equal players in an uneven economic playing field. The disparity is enhanced by uneven access to land, poor access to education and health care services, lack of alternative employment opportunities, low levels of infrastructure development for the transportation of goods, and lack of access to communication facilities. Lack of access to financial resources (credit) limits their resilience and ability to take risks (Jodha 1992, Hoermann et al 2010, Rasul et al 2012). This can also hinder them from producing commercially competitive products. Discrimination and the caste system add to their exclusion and prevent them from accessing their rights. The challenge is to bring these poor and socially excluded people from mountain areas to participate in the value chain. A strong focus in collaboration and coordination through horizontal and vertical integration of the small beekeepers can be sources of valuable strength to countless numbers of mountain rural people's livelihoods.

Rather than just a 'hobby', beekeeping can be seen as an important occupation in the HKH region having advantage on economies of scale as well as scope after collaboration (Bradbear 2009). Collaboration can also show increase in bargaining power as well as quality assurance at the production end (Mayoux L, Mackie G. 2007). The case study is based on the implementation of the action research on 'Improving Livelihoods through Knowledge Partnerships and Value Chains of Bee Products and Services in the Himalayas' carried out during 2009 to 2012 in Kishoreganj (Bangladesh), Alital (Nepal), and Chitral (Pakistan). This paper tries to prove that in rural communities where access to income generating options is limited, small scale commercial beekeeping can contribute significantly to livelihood security by strengthening the collaboration among the beekeepers as well as the chain actors at various levels.

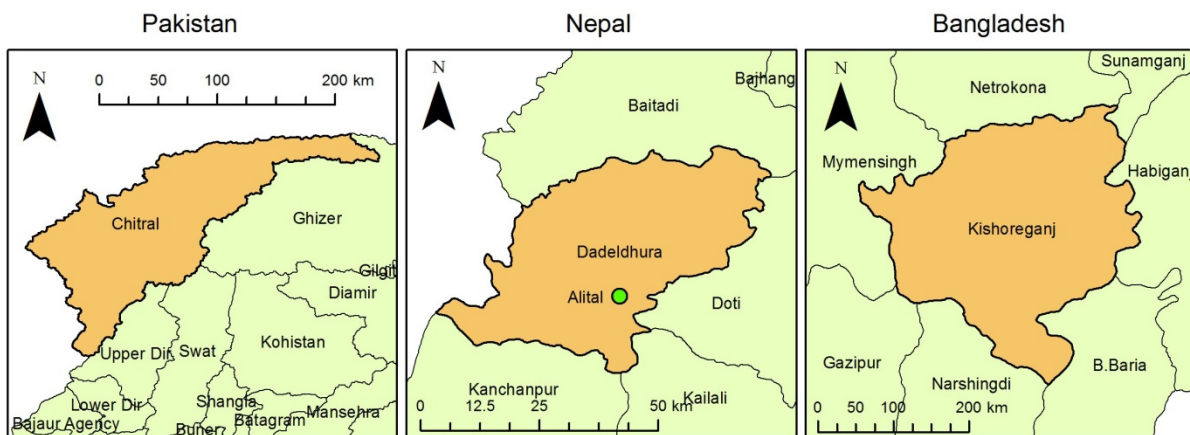
The research framework is based on value chain development approach. Value chain development approach is relatively a new concept in the mountains of the HKH. A generic value chain framework lacks understanding of the socio-economic and environmental imperatives in mountains which greatly shape the ways in which interventions will function (Hoermann et al 2010). These authors further suggested that the disregard of mountain specificities makes value chain interventions less successful and can expose mountain communities to even more vulnerability, hence, there is a pressing call to adapt the generic value chain approach to the mountain specific context. Also a regional analysis of the honey value chain has not been conducted. Most of the literature focuses on one country and mostly in the plains e.g. by (Visser et al. 2012). Little is known about native honey bees of the mountains and very little knowledge is there on value chain in the mountain and how poor beekeepers of the mountains can be linked to the commercial value chain. To address this gap, this research has been conducted to analyse honey value chain in the mountains from a regional perspective, identify leverage points to ensure participation of the poor in the honey value chain.

Methods and Approaches

In this study, the VCA framework of Kaplinsky and Morris' (2001) was applied in the context of local value chains. Their methodology has four main components. *Cerana* Honey value chains in each study sites were mapped to give a visual presentation of the actors in the chains and connections between them; assess governance structures in the value chain to understand the relationships and coordination mechanisms that exist between actors in the chain, and how these may need to be restructured to improve the chain. Coordination between different actors in the same position or different positions in the chain was strengthened by bringing them together on a common platform to enhance common understanding thriving towards a common goal, including efforts that prevent actions based on a different agenda (Riisgaard et al. 2008).

This paper reports the findings of a pilot project carried out during 2010 to 2012 in selected sites in three countries - including Kishoregonj district of Bangladesh, Dadeldhura district of Nepal, and Chitral district of Pakistan. This research project supported by Austrian Development Agency (ADA) intended to provide innovative livelihood options to enhance the livelihoods of the farmers through promoting pro poor value chain approach. It analyses the *cerana* honey value chain to identify leverage points in order to make inclusive growth by encouraging participation of the poor farmer in the commercial value chain. The leverage points were then addressed through organizing beekeepers, building their capacities and the capacity of local institutions/ associations, linking them to market, branding etc.

Research Area



Data for value chain analyses were collected through 50 in-depth interviews of beekeepers and 20 in-depth interviews with beekeeping enterprises in each country, 6 focus group discussions with women and men farmers involved in the value chain in each country. Secondary information was generated mainly through extensive literature review on livelihood issues of value chain in mountain contexts comprised both published and unpublished reports by the government, non government, and other local level stakeholders.

Results

Situation analysis

On developing pro-poor honey value chains the project, together with its partners conducted action research to understand the existing situation of *cerana* honey value chains in selected study sites and find ways to enhance benefits to poor producers through developing pro poor value chains. While doing this situation analysis the project tried to get as much background information about the study area as possible through the survey as well as focussed group discussions and interviews. This study tried to analyse the target group of the selected area, their role in the chain and areas to strengthen their role. This information supported value chain analysis in the region to analyse the missing links and functions and design intervention in the mountain context.

The study site in Bangladesh (Kishoreganj district), people are mostly engaged in agriculture. Beekeeping is not a traditional practice here. It was introduced some 30 years ago for self consumption and medicinal purpose. Recently it has been identified as a potential source of income with the growing demand in the urban market. The survey statistics show that agriculture covers 56% of the household income followed by fish farming covering 24% of income. Beekeeping only form 1% of the household income and 19% comes from general labour. The number of bee colonies per beekeeper varied from 6 to 10 colonies producing 1 -5 kg/ colony per year. The price difference of *mellifera* and *cerana* is not seen in Bangladesh. The retail price of honey varied from US\$ 5-6/kg whereas its wholesale price was US\$ 2-3/kg. Beekeeper mostly consumes honey or barter it or gifts it.

In Alital area of Nepal farmers mostly depend on agriculture and natural resource for their livelihoods. This is a small village with very little income sources. The average household income is less than \$2 a day. Landholdings are small and farmers depend on on-farm as well as off-farm sources of income. The findings showed that income from beekeeping comprises of 35% of annual cash income. The area is biodiversity rich with forest coverage. The food is sufficient for 6 to 8 months for bees therefore cost of production is not very high for *cerana* bees in these areas. Almost all of them have *cerana* bees in their houses and each family kept 2 to 10 hives in average producing 10 to 12 kg / colony/ year in the study area. Beekeepers are taking beekeeping as a commercial product.

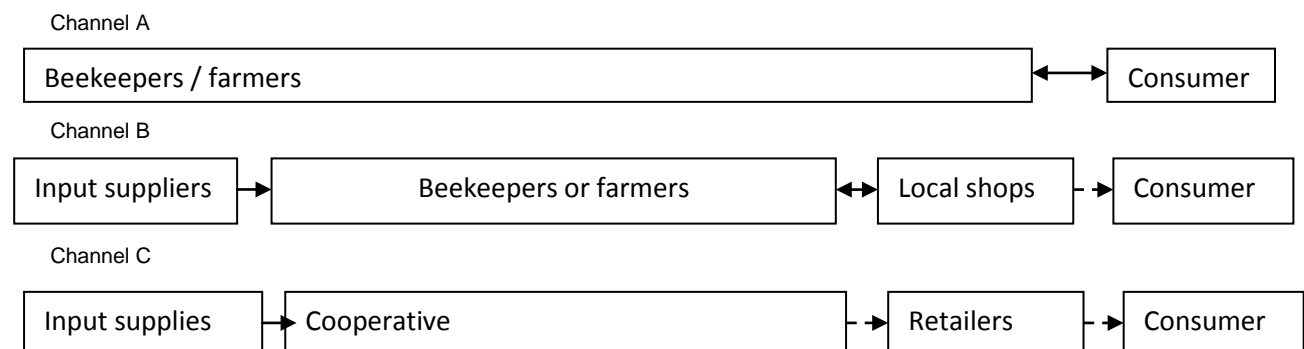
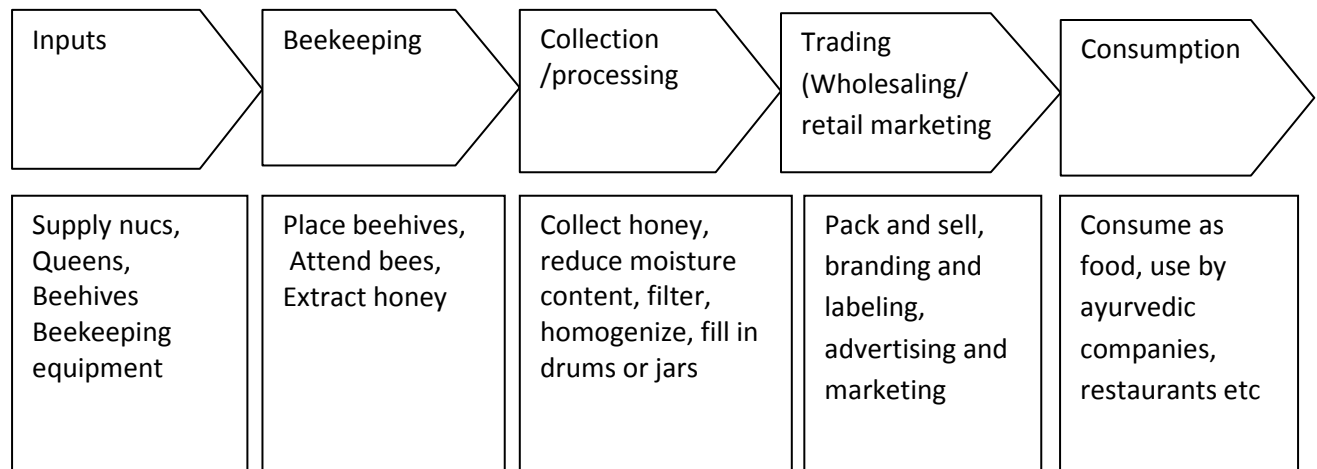
In Chitral particularly in Kalash valley of Pakistan families mostly depended on natural resources for livelihoods. Most of the families grew maize, wheat, red beans, potato, vegetables walnuts and fruits on the small pieces of their land which is not sufficient for the whole year. Therefore they depended on off farm activities for additional income. Beekeeping is a traditional occupation and honey is produced mostly for household use. However, recently farmers have started to understand its commercial value and, selling honey in the nearest town. As of now it is seen that the contribution of honey in the livelihood is only 3% which is getting popular and increasing in the district with more demand and big buyers like Hasu foundation coming in the valley for bulk purchase. These days, local organizations are promoting beekeeping with *Apis mellifera*. However *Apis cerana* honey sells at a much higher price of UD\$ 8 - 11/ kg compared to *mellifera* honey which sells at US\$ 4 - 5/kg. The demand is stable for *mellifera* as it is collected by big traders while *cerana* honey is much preferred by tourists and the locals and is valued for its medicinal uses.

Mapping Value Chain Actors

In the HKH region, in general the chain has only two players' producers and consumers. Beekeepers play as an integrated actor of the chain conducting all the functions and sell it from home or to the nearest market by themselves. In most of the cases it is seen that people trust honey which they see being harvested, and therefore the chain really works on the basis of relation of the farmer and his ability to spread information on harvesting time.

It is important to do primary processing for honey even though it requires very little processing which rarely happens in the mountain areas. Beekeepers mostly carry out all the functions of the chain, except only in few areas where these functions are carried out by different actors in the chain. In our study areas three channels were found existing. One from beekeeper to consumer; two, input supplier - beekeepers – local shop owner - local consumer; and three, input supplier - beekeepers – beekeepers cooperative - retailers – consumers as shown in the diagram below. This diagram shows the functions and the roles, particularly for small beekeepers accessing the local market.

Input suppliers: Input suppliers constitute the first step of the value chain and they comprise of the individual farmers or local entrepreneurs who are usually carpenters and provide the hives. There are enterprises that provide the necessary tools and equipment for beekeeping like gloves, bee veils, nucs etc to the beekeepers. Other very important input service providers are the government and non government organization who provide training and other capacity building services. A third category of input suppliers also exists in the mountain areas. This includes the beekeepers who deal in preparing and selling bee colonies.



Beekeepers/ farmers: In most of the regional member countries (RMCs) of the Hindu Kush Himalayan (HKH) region beekeeping function is done by beekeepers however they are also involved in collection and primary processing of honey. In some cases they are also doing trading as the amount produced is very low. While going to market to buy the household necessities these farmers also carry honey to sell in local market. They also barter honey with their vendor for the household goods. Honey production is currently a male-dominated activity although records show that women are increasingly taking it up as an emerging income generating activity. However, their involvement remains limited to supervising the hives, feeding and inform the male members of the family on the developments. Production is mainly through two types of ownership systems. One of these is individually owned hives at household level which is a most prevalent in villages. A second system tried in some areas consists of group owned hives located in the members' farms. Individual beekeeping entrepreneurs were found to have minimum 5 bee colonies and they carry out beekeeping using both inherited indigenous knowledge and new skills.

Collector/ processor: Cutting of comb and squeezing honey by hands is the most common method of extracting honey from the traditional fixed comb hives in the study area. It is in most cases packaged in pre-used utensils of alcoholic drinks, cooking oils, kerosene etc. This deteriorates its quality and puts off the consumers. In Bangladesh they sell it in plastic bags. Such honey is sold at lower price than honey extracted through centrifugal honey extractor. However, squeezed honey, if harvested in a clean hygienic way and packaged in air tight glass or plastic bottles would also be of good quality and could fetch a better price. It has been reported that honey stored, processed and sealed by bees in the cells of comb is always of good quality (Bradbear 2009). Even though very less processing is done in the mountain areas this scenario has been changing. Support has been provided to strengthen horizontal linkages and organize beekeepers into cooperatives or self help groups. These groups or cooperatives collect honey, process it and sell it in bulk with good packaging and labelling in order to have better product and consistent supply in the market. This help in increasing their bargaining power. Cooperatives like Alital multipurpose cooperative in Nepal study area buys honey from individual beekeepers and sends to the nearest urban market in Dadeldhura district headquarters after processing, packaging and labelling it. However these institutions are at a primary stage and needs supports to be strengthened.

Traders: Mostly individual farmers are the traders in the study areas. There has been increase in the demand for honey in recent years. Tourists and other visitors in the areas want to take honey as local product and offer good prices. A beekeeper has to build rapport with the retailers to convince them about the quality of honey. If the rapport is good the retailers will promote his (beekeeper's) honey and sell it on good profit and also give good value to the beekeeper. But if they fail to do that selling honey at an *ad-hoc* basis would fetch very little price and lots of distress in selling honey. In some cases big traders like Hasu Foundation in Pakistan buy honey in bulk and sell it in the urban market. But these buyers are only interested if they are provided with substantial quantity of honey. For them it is not feasible to go door to door to collect honey, and thus they prefer to buy it in bulk from a group or cooperative.

Consumers: The end markets mostly comprise of the eventual consumers of honey. These include local honey consumers who use honey as medicine or to mix with herbal medicine. There are urban consumers, like tourists or other visitors who would use honey as a table food.

Economic analysis

The study shows that in the mountain areas the beekeepers do all the functions from collection, processing to marketing. This paper talks about the small sections of farmers for whom honey production and selling is a side income. Their main occupation is agriculture, but they also have few bee colonies at their backyard. This chain though looks very short but is important for farmers in the HKH because the honey is sold in the local market at a very high price. They fetch in an average in the region around US \$5/ kg for the honey and in an average they get from one colony about 3 to 5 kg in one harvest and they harvest twice in a year. Therefore in an average in the mountain people earn US\$ 40 per colony as additional income. This is a substantial income for them which they spend for education of children, renovation of their houses or buy grocery items like sugar, kerosene, salt etc. The more colonies they have the more profitable the business would be. In an average each household would have five bee colonies with them which mean that they can earn in an average US\$ 200 in a year only from selling honey in the local market. In fact US\$ 200/ year is a good income from *Apis cerana* bees in the mountains as this business has very little investment cost. It is just the cost of their own labour (time they spend), hives which lasts for more than 5 years and some equipment and some sugar. The cost of production is less than 10% of the profit if they are not to calculate the time they spent in this job. If they calculate the time which is in an average 20 days in a year the cost of production increases up to 30% of the total profit.

Most of the time the beekeepers who are trying to do this business seriously and have more than 10 colonies have to sell their product in a more formal and organized channel. They have to also compete with the others in the market and also with *mellifera* honey. In that case they may get a little lesser price as they have to go through intermediaries. In such a case they have to sell their honey at US\$ 4 a kg. Since the volume is high as they have more than 10 hives they still profit from honey business as they get USD 320 / year (10 hives *2 harvest*4kg/hives*USD 4/kg). However, there is potential for promoting *Apis cerana* honey produced by mountain beekeepers as a natural, organic, high value product to sell it at a premium price.

Major Concerns and Areas of Improvement

Different countries have identified different leverage points which is very much area specific. However looking at it holistically, it is found that in the study sites the problems are very much similar to one another. Even though for each chain in each country the weakest link or leverage point is very specific it can be broadly categorized into three levels as given below.

Country-wise main leverage points	
Bangladesh	<ul style="list-style-type: none"> • Low production and relation with buyers is at spur-of-the-moment • Quality of honey is not consistent(unripe honey) and inadequate knowledge on producing quality honey as per market requirement • supply of honey as per the market requirement is not adequate • lower bargaining power of producers and no formal groups or association
Nepal	<ul style="list-style-type: none"> • Low production • inconsistent quality(not filtered and handled well)

	<ul style="list-style-type: none"> • inconsistent and ad hoc supply as well as demand • Cooperative needs to be strengthened for beekeepers to be loyal to their cooperative.
Pakistan	<ul style="list-style-type: none"> • Low production • problems with diseases • inadequate awareness and knowledge of bee flora and migration • weak relation between beekeepers as well as buyers

At production level: Low production is the major leverage point in case of *Apis cerana* honey. In almost all the study sites beekeepers are mostly practicing beekeeping in log or wall hives with an average of 1 to 5 hives per hives. A very few sections of beekeepers understood the importance and moving to modern hives. This transition took a long time for ICIMOD to change the perception as well as tradition of people which was inbuilt in the system. Also few times bees did not adjust to the new housing system which also was discouraging for farmers. But for the sector it was important to change to modern bee management system which led to higher yield as well as better quality. The process upgrading from traditional system to modern system is one of the biggest leverage point. Bangladesh is exception as beekeeping was not a tradition but was introduced with modern hives. In all the countries motivating beekeepers to be commercial beekeeper by increasing their number of colony is essential to increase production.

The concept of commercially producing in a large quantity and selling it has been identified as a leverage point throughout the study area in the HKH. There is a need to have functional groups/cooperatives/association working together to create and cater to the market demand, to provide assurance to the buyers who are in the market sustainable supply which he can promote. As of now beekeepers are going in an ad-hoc basis and selling 2-3 kg honey which cannot be accounted for in value chain of honey. Also identify and control diseases that affect the colonies, and conservation, management and promotion of bee flora which will help them to increased quantities and different varieties of honey.

At processing level: Awareness in regard to honey processing, e.g. how to process and why to process it and when to process honey needs to be addressed. People are selling any surplus honey in any used bottles, plastic containers or gallons. In this process there is much leakage, and also proper measurement of the used vessels is not done which hampers in the profit for the beekeepers. Also since very little processing is done fermenting of honey can also occur which hampers the quality and image of honey. Since they are small farmers having small quantities at a household level without much intention to sell it in the market they do not consider processing and packaging of honey. However in some areas a few lead farmers in some villages, e.g. in Chitral in Pakistan and Alital in Nepal people have taken it in a commercial way using modern hives and selling it to/through their cooperatives/groups/ association/enterprises. In spite of the fact that the demand is high, the market demands certain quality, for example it should be free of wax and brood, should have lower moisture content leading to its long shelf life. Besides, honey should be packed in a bottle which is easy to carry and does not leak and become sticky etc. Therefore while going commercial the need to meet the market requirement and understanding marketing dynamics like pricing, labelling, and packaging can also be seen as the leverage point.

At marketing level the leverage point is to identify and cater to the niche market. Farmers have no idea who their customers are and at what price customers are willing to pay for their honey. They also don't have an idea on market scenario and how much is the market demand and much more can they produce which market can absorb. Due to this beekeepers are scared to take it in a commercial scale. Unsure market, market requirement as well as confidence that they could produce as per the need of the market is the major leverage point. There is a need to form groups or cooperative to train beekeepers in terms of quality, to link them with the assured market as well as give awareness on their comparative advantage (forest based, good quality) and train to increase their competitive advantage (market requirements and dynamics). They also need to be effectively trained to realize why they need to be competitive with their product which have comparative advantage and how they can promote their comparative advantage better so that they are more visible in the market. It is also important to understand the actual demand for their product in the local market as well as in the cities.

Major intervention: Strengthening linkages to ensure participation of poor in honey value chain

The study tried to prove that most of the leverage points identified at various levels of the honey value chain has been solved by horizontal linkages are strengthened. The major problem in the study sites was low production. Each household selling few kilograms of honey as and when they require money did not solve the problem of low production. The project saw the need to create synergy between beekeepers to come together and collect honey in one place so that they can get a definite buyer and gain market confidence and provide regular supply (Mayoux and Mackie 2007). Another major problem in terms of production was quality. Once the farmers are organized it was easier for the buyer to specify their quality parameters and the groups - be it cooperative or association - can ensure the quality. The group (formed in case of Bangladesh and Pakistan and strengthened in case of Nepal) provides services like measuring moisture content, checking if the honey is ripe or unripe and seeing that no foreign body is remaining in the honey and that the honey is clean and edible, and they charge some cost to the farmer. They also give training on the beekeeping, queen rearing and quality aspect. This not only gave confidence to the buyers on quality assurance it also increases bargaining power of the beekeepers. This approach has also worked very well in other sectors, e.g. bay leaf, oranges, etc. (Choudhary et al 2011, Rasul et al 2012).

Before our intervention, buyers would ask many questions to the beekeepers such quality and origin of the honey and finally reluctantly pays little money which would be half of worth in the market price. Moreover, in the bargaining process these poor excluded groups would lose their confidence. In the remote areas like mountains and with such excluded group, our most sustainable intervention was to bring them together. Initially it was difficult but once they understood the power of unity the intervention continued and was replicated in other activities. Building capacity creating lead farmers in terms of beekeeping and providing knowledge on the use of pesticides all becomes very easy once they are unified in a group (Harper 2007). Activities like branding and packaging has also become feasible to fetch higher price through one organization working on these issues. One beekeeper cannot even think of branding as for him it is just a side line activity which provides good sum of money; however he/she is more interested in agriculture as it is the main source of food security. Study showed that a beekeeper is not sure that if he/she produces more he/she would be able to sell it. Besides, he/she has no time or energy to carry honey on the back to the market and argue with the

buyer. However if someone assures good price and market he/she would readily spend more time to produce a little more, and give some extra time to process it better. The cooperative/ group/ association would spend more time on quality assurance, finding market and good buyers, bargaining with them, providing them quantity of honey etc. They are only few members who are educated enough to understand the deals with the buyers as well as keeping records. These people mostly are the school teachers who do part time work in the cooperative and get some salary; or the lead farmer who is educated and are interested in taking beekeeping as a full time business. They cannot only support the group but can also be an example for others to follow. Today there are various beekeepers who are interested to be the members of this groups/cooperative/association. They have seen the benefits and are assured that they have their groups who would buy their honey or help them to find the market. Following initiative were implemented in the research site.

Beekeepers Cooperative Association was formed in **Kishoreganj, Bangladesh** beekeepers were organized into. This organization helps them to market their honey. This organization is also planning to work on labelling and branding so as to compete with other brands. There are more than

Chitral Beekeepers Association was formed in **Chitral, Pakistan** which started functioning in 2010. Due to formation of beekeeping association different organizations signed MoUs with association to strengthen its set up. Among these AKRSP Chitral, and Hashoo Foundation are the prominent ones. Association members supplied about 300 colonies to the communities and delivered trainings. Association members are working together, for example, in moving bees and collective marketing. Various initiatives to strengthen existing Beekeepers Association in legal aspects through registration and developing linkages with concerned service providers and facilitating them in market identification, ensuring quality and in branding are conducted. Besides, it facilitated participation of beekeepers in events such as trade fairs, exhibitions, and road shows. AKRSP also provided guidelines and technical assistance to the association for advertising and promotion of Russian Olive Honey. The Beekeepers Association is producing special uni-floral honey and selling it under brand name "Russian Olive Honey".

Alital Multipurpose Cooperative was strengthened in **Alital, Nepal**. The key impact is branding honey as "Alital Chiuri Honey" as a market upgrading initiatives to meet the demand of the wholesaler and retailer in the nearest market. The honey is packed in one kg and half kg bottles which are sealed properly to avoid leakage as well as to build credibility of the cooperative. Trainings in value chain, book keeping and accounting, computer operating, honey quality were provided. In addition exposure visit to the cooperative members was organized to strengthen the cooperative.

Conclusion and Major Learning

The situation analysis found little variation in the *cerana* honey value chains in the study sites. This is probably because the landscape, lifestyle, biodiversity, and socioeconomic dynamics are similar in the mountains of the HKH. The results of the value chain mapping and analysis were also similar in that there were very few functions in the chain and these functions were generally performed by one actor – the beekeeper – who produces, processes, and sell the honey. In most of the project sites, beekeepers sell honey from their doorstep and on the local market – or barter it for household necessities. As a result of the groups, association, and cooperatives that were established and strengthened as part of the project, today the value chain looks a little different, with a few more actors in the chain. This helps farmers to focus on production. The formation of these institutions has organized trade channels and created jobs in the villages. These institutions have added a new dimension to honey sales with proper packaging in bottles instead of used containers, which has helped reduce loss from leakage and made honey more marketable. Organized channels are able to collect substantial quantity, making it easier to link them with retailers and large companies in the cities. The value chain is now more organized in Nepal, Pakistan, and in Bangladesh the newly formed Beekeepers' Cooperative Association is being registered.

ICIMOD's focus was to organize the chain and provide better share of the benefits to the producers in the chain. Horizontal linkages in the form of cooperatives and associations have **helped to increase the bargaining power** of producers and prevent them from being exploited by buyers and get better share. Beekeepers in Pakistan and Nepal are **now receiving a premium price for branded honey like Russian Olive Honey and Alital Chiuri Honey**. Following are some of the major points that came as a major learning from the research to ensure participation of the poor in the value chain through horizontal linkages.

Formation of group/ community organization/ mobilization approach: It takes time to form a group as beekeepers are poor community have less or no land and have limited option for income generation. Since mountains and hills are difficult people live sparsely and are scattered in and around the hills. The major problem is to meet hand to mouth needs. Bringing them together for common good and long term benefit is very difficult in the mountains. It is found that there is a need to create awareness, set example and provide quick benefit to unite them. Unless advantages are seen it would be very difficult for the poor beekeepers to be convinced of the benefits of organizing in the groups/cooperatives. It might take time for them to understand that they might get spontaneous market once in a while but these association/cooperatives are there to stay and if they are flourishing, those as members will also benefit. Various rounds of meetings and awareness raising activities are required to assure beekeepers that being associated in a group and abiding by the group rules will eventually benefit them. Once they become the member and understand the major objective of the cooperative/ or association they would then start working for the common agenda. Since it takes time to pick up the pace for group formation it is important to allow some gestational time and in the mean time create some lead farmers who can set an example and motivate people to be in the group.

Long term planning: Formation of group is not a short term activity in the mountains. The conditions for ensuring participation of the poor in value chain cannot be created overnight. It requires long-term planning and an investment of time and in capacity building. Time, effort, and

resources must be directed to non-market activities like confidence building, negotiating and mitigating conflict so that different people can work together. It takes long time to understand the culture and group values and norms of disadvantaged people and gradually shape these values and prepare them for market engagement. To make the members associate with the group needs longer term planning and monitoring. In case of Alital in Nepal, work to organize beekeeper was started in 1996, and the cooperative was functional in 2005.

Capacity development of community organizations, groups and individuals in product diversification: Beekeepers in the HKH are already more withdrawn than others in mountain areas, as they have been often subject to discrimination for generations. It is important to make them understand that what they have is something rare and valuable. It is also important to unite them to produce quality products as per market demand. It is important to teach disadvantaged groups value addition and diversification. Vertical linkages can bring a danger of monopoly and exploitation from actors downstream, whereas horizontal linkages help disadvantaged groups overcome discrimination imposed by society and engraved in their own minds. Capacity building in packaging to add value, like packing honey in half kilogram glass bottles, making honey based products such as honey drinks etc., and nuts in honey, and linking them with high end markets in the neighbouring towns/ cities, not only increases the price, it also encourages youth to reconsider engaging in honey business. If the capacity to produce a market driven product is built, beekeepers can make the most out of the specialized niche market.

Donor coordination and integrated approach: In the process of strengthening horizontal linkages it is very important to know the other players who are supporting this sector. Coordinated effort would strengthen the sector in all aspects. To be inclusive, it is important to invest in education and capacity building to gradually create an enabling local social setting to engage disadvantaged groups to participate in market-related activities. Investment in disadvantaged groups as potential local assets in the chain is ultimately profitable to all the parties in the commercial value chain, as disadvantaged people are often the source and starting point of value chains. For development organisations, the challenge is that projects are time bound and most are short term, which compels many development organisations to engage those already involved in the chain instead of disadvantaged groups. Therefore coordinated effort and strong commitment would bring positive impact in a shorter duration.

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