

**Linking Biodiversity Products to Markets to improve the Livelihoods of the
Resource Poor:
*Case Study on the Market Chain of Capers in Syria***

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Abstract

Using a pilot study conducted in Syria, this paper highlights the importance of improving market value of biodiversity products from underutilized plant species and the process by which these species enter the market and contribute to the livelihoods of the resource poor. The emphasis is on the participatory process that involved the market chain actors to find solutions to a profitable market and draws lessons for improving and scaling it up in similar contexts.

A pilot study was conducted on how Syrian rural communities are developing markets for capers and how this activity contributes to their livelihoods. Together with the actors engaged in the market chain, we identified ways to generate market value to incomes of the poor. The study involved a market chain analysis linked to livelihoods strategy and involved collectors, processors and traders, policy makers and cultivation specialists. A multi-stakeholder meeting with the market actors was organized in a collection area: Jabal al Hoss. The purpose of the meeting was to bring together these actors to discuss means of further developing the caper market, with an emphasis on the most vulnerable actors, the collectors. The results of this meeting enhanced those of the pilot study, and prompted recommendations based on the participants' views for a strategy for developing a successful caper market in Syria, benefiting the actors at all levels of the chain. These elements are very useful for guiding interventions in the caper market development, including efforts aimed at raising awareness among government officials, developing organizations, and the private sector about the value of this biodiversity resource and its economic potential for the livelihoods of rural communities.

Introduction

In this case study on capers in Syria, conducted at the International Plant Genetic Resource Institute (IPGRI) Regional office for Central and West Asia, we want to tackle the issue of improving the link between farmers and markets. In this study we used a process which addresses livelihoods of all market actors and the functioning of the market chains, using biodiversity as the entry point. This study highlights the importance of improving market value of biodiversity products derived from underutilized plant species and the process by which they enter the market and contribute to the livelihoods of the resource poor. Lessons can be drawn from this case study about the participatory method applied, involving the market chain actors to better identify ways to generate market value from this natural resource. This approach may be scaled up and apply to similar contexts.

The study involved a market chain analysis linked to analysis of livelihood strategies of the caper market chain actors, such as collectors, processors and traders, policy makers and cultivation specialists. To find out about potential for developing a market for capers, information on successful examples in other countries (namely Italy) has been gathered. Constraints and opportunities for improving the market chain organization were widely discussed stirred by a participatory multi-stakeholder workshop, where all the actors involved in the chain met together to discuss options for re-organizing the chain, in particular to benefit the most vulnerable actors, the collectors. This process is based on some elements of the Participatory Market Chain Approach (Bernet et al., 2005).

The importance of biodiversity products on the livelihoods of resource poor

Increased reliance on major food crops has been accompanied by a shrinking of the food basket which humankind has been relying upon for generations (Prescott-Allen and Prescott-Allen, 1990) and consequently a threat for the agro-biodiversity. However, contemporary ethnobotanic surveys indicate that biodiversity products based on hundreds of useful “minor” plant species are still grown or collected particularly in marginal environments of developing agricultural economies (IPGRI, 2002). These species are often cultivated or collected by the resource poor in areas detached from market and social infrastructure. They are called underutilized species because of their small commercial value in global and national production compared to major agricultural commodities, and of their undeveloped market chain.

Underutilized plant species are still managed by poor communities in remote areas and have high use value for local people. As a consequence of their status, underutilized species have also attracted little research interest from either private or public sources. However, despite the low levels of research, these species are often tolerant of extreme growing conditions and have commercial potential in local, national or international markets that has not yet been exploited (Padulosi and Hoeschle-Zeledon, 2004). Rural communities depend on the diversity of the species to cope with the environmental risks and meet the consumption and income needs when markets are unreliable (Engels et al., 2002).

The role that local markets play in generating growth of rural incomes has been long established. In recent years, strategies and initiatives have been promoted in an effort to direct market development toward the poor farmers. Increasingly, the lack of access to markets is seen as key constraint to the eradication of rural poverty (Hellin et al., 2005). Better commercialization of products derived from underutilized species may be translated into greater opportunities for income generation by poor farmers.

Capers

Caper (*Capparis spinosa* L.) is one of the underutilized plant species in Syria. It is a wild spiny shrub, well adapted to harsh environments, dry heat and intense sunlight. In Syria, caper can be found growing wild everywhere, around dry and rocky areas, for example the desert areas of the *Badia*. While caper is widely cultivated in other Mediterranean countries, mainly in Italy, Spain, France, Algeria, Cyprus, Greece and Morocco, in Syria caper is only a wild species and is cultivated on a strictly experimental basis in research nurseries. The main caper product for trade is the young flower bud, collected before the flowers have formed. After collection these buds are preserved in salt, or pickled in vinegar. The caper buds are eaten in Europe and other countries as a food condiment. The caper buds are not consumed in Syria. Wild caper buds, commonly called “kabar” (كبر) are collected to be traded by the poor of Syrian rural communities, in particular the resource poor nomadic families living in the desert, for generating an important additional income. While the actual amount of caper buds collected is unknown, an ongoing study by the University of Aleppo estimate that the yearly harvest is about 4000 tonnes - only one quarter of the potential caper collection.

There is little use and market for the plant in herbal medicine in Syria. However, caper products are sold in herbal shops in Syrian towns and their use is known by herbalists.

The market chain analysis and the livelihoods strategy linked to this resource

Approach and process

The case study focused both on market chain and livelihoods issues of the actors involved in the chain, related to capers and its products. The case study identified constraints to and opportunities for increasing the contribution of capers to the livelihoods and welfare of all those involved in the market chain in Syria (Giuliani and Padulosi, 2005). Two methodological approaches were used:

- The value chain analysis (Kaplinsky and Morris, 1999): An analysis of the market chain organization and the identification of the actors involved in the collection, cultivation, processing, production and trading of the products was conducted through focus group interviews to academics, government bodies, and market chain actors;
- The livelihoods assets survey: once the actors involved in the market chain were identified, a household survey was carried out to assess the impact of the activities on capers on their livelihoods characteristics at actors' level (collectors, processors, traders).

Information from the successful production, market organization and trade of capers in Italy gathered through focus group interviews, was used for comparative purposes.

Results on the market chain analysis

While capers have been widely cultivated and used in other Mediterranean countries, collection of caper flower buds was started only recently in Syria by rural and nomadic communities. The collection takes place from June to August and represents a secondary source of income for the communities' members. The market chain and the chain actors can be depicted as shown in Figure 1. Collectors are mainly young children between 6 and 14 years of age and women. One individual is responsible (the collector chief) for a group of collectors in each area. The collectors' chiefs liaise with a manager of a private enterprise, who provides them with the plastic boxes for collecting the capers and defines the price for a kg of buds. Part of the money is

used to pay the collectors and, sometimes, the rent of the premises where the handling takes place.

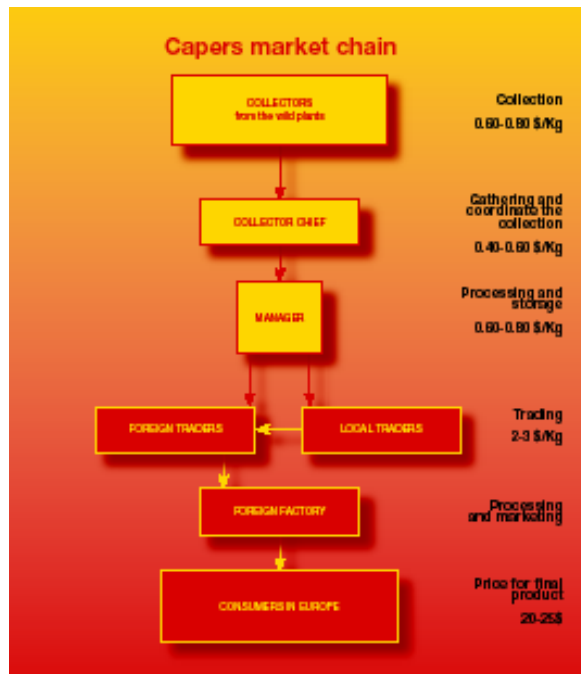


Figure 1: Capers market chain in Syria and margins in 2004

Handling the caper buds involves entire families working mainly in their homesteads without any value-adding procedure. The caper buds are only sorted by size, with a rudimental tool, mixed with salt and stocked in plastic containers. After that, they are collected and stored by the private enterprise, playing also the role of the local trader, who will then sell the capers to foreign traders (mainly from Turkey). Finally, the foreign factories (mainly in Turkey) bottle the capers, after further handling and processing, consisting in sorting them by size, adding preservatives and vinegar. After being branded, the product is sold on the European market with a high mark up, concentrated at the end of the market chain. The amount of capers collected, their price and the number of people involved in the collection, depend on the yearly demand of foreign traders, which fluctuates greatly.

Caper cultivation practices are lacking and there is as yet no institutional support for the market development. The biggest constraint in the market chain is the lack of market transparency, information and trust among the market chain actors. Collection from the wild provides unstable supply and thus increases the lack of trust among chain actors. There is a lack of awareness amongst collectors about the final use of the product and no organised community structure dealing with the collection, processing and trade exists. Working conditions are very hard during collection due to the high temperatures during the harvesting season and the thorns present in the bushes. Research on cultivation and support for efficient value-adding processing is lacking. The harvesting method of the wild caper plants can be unsustainable and threatens the conservation of the species. Considering the above constraints, the study highlighted the following opportunities to improve the caper market: (i) horizontal integration through cooperatives of collectors that may increase benefits for the rural communities dedicated to the collection, (ii) vertical integration of collectors and traders through the involvement of the

business sector that may prompt the market benefiting the rural communities, and (iii) the creation of an enabling environment for the market actors and research on caper cultivation by the government.

Results concerning the livelihoods assets of the chain actors

The following results have been obtained by the household survey involving 27 interviews, analyzed at chain actor level (collectors, processors and traders). The lowest level of education has been found among the collectors, with an average illiteracy rate of 60%, comparing to the 29% of illiterate processors and none illiterate traders. The mean of years of experience of the chain actors reveals that they have relatively short experience in the activity they carry out (between 5 and 12 years). The average labor share of one year of the actors in the chain, dedicated to capers, is 19% for collectors, 14% for processors and 17% for traders. The collection is considered to be a highly labor intensive and time consuming activity.

The labor force for caper bud collection is formed by members of the collectors' households, without any external paid workers (Table 1). The survey revealed a great presence of women and children less than 12 year of age in the market chain activities, in particular in the collection. This is explained by the fact that collection is the least structured activity, carried out without funds and facilities. Women are greatly involved also in processing, while trading is essentially a man task.

Table 1: Average ratio to total workers for market chain actors

Chain actors	Average ratio family members /tot workers	Average ratio women/tot workers	Average ratio children/tot workers
Collectors	100%	52.59%	29.03%
Processors	82%	34.31%	0.00%
Traders	77%	11.49%	20.56%

Actors do not receive any form of training about collection and processing of caper buds, although respondents (including traders) indicated training needs in cultivation practices, storage, packaging, manufacturing and marketing.

About 70% of the collectors do not own any land. They gather the wild capers either from communal or state land, not knowing how many hectares they harvest. Thirty percent of the collectors think that the capers are becoming less available. This might be due to unsustainable harvesting techniques.

Using a self-assessment, based on a list of wealth indicators develop for a self-appraisal, Figure 2 shows that more than half of the collectors consider themselves “poor”, while all processors reported to live in intermediate wealth conditions. Almost 40% of traders considered themselves “well-off”.



Figure 2: Percentage of the actors' wealth groups

In average the activities linked to caper contributes to about 20% of the yearly income of the chain actors'. This means that income from capers represents an important additional household income.

Lessons learned

A general rule about the process of applying the market chain analysis on products derived by underutilized plant species is that the information can be collected only through primary source due to the complete lack of market information and secondary data on these species. Thus the participation of the stakeholders involved in the chain becomes not only very important, but fundamental to the research on livelihoods strategy linked to the market chain analysis. This obviously implies a detailed field work in collaboration of people that know the "hidden" market and the collaboration of the people involved in the chain to reveal fundamental and correct information on the market chain and on the households' livelihoods. The livelihoods survey analyzed by actors' level helped highlight the divergences in the perception of the same issue from the view of different market chain actors. This helped to identify at which level of the chain barriers and opportunities are placed. Dealing with various stakeholders resulted to be difficult due to the lack of trust existing among the actors. Collectors and collector chief resulted to be the easiest to identify and the most open, also about cost/income related issues. As expected, getting unbiased information by traders and middlemen resulted to be the most difficult task. Nevertheless, without their collaboration and provision of correct information, it is almost impossible to foster a reorganization of the market chain of the product in question. A good way to retrieve the greatest amount of information and collaboration was to gain the actors' trust, by explaining the aim of the research and the need of their collaboration to try and achieve any results that they were interested in. Another way to increase their trust and collaboration was not to reveal the information provided by the actors to other actors of different category, in particular related to price/income issues.

We noticed that a great advantage was to have the interviews conducted by local interviewers coming from the same areas as their interviewees. This helped to create an atmosphere of trust with the actors, taking into account their habits, customs and dialects.

The multi-stakeholders workshop

To initiate a process that will help re-organize the market chain of capers and will increase the benefits to the actors, in particular the poorest at the top of the chain, we engaged in the organization of a multi-stakeholder workshop, in partnership with the International Center for Agricultural Research in the Dry Areas (ICARDA), involving the market chain actors to discuss together possible ways to develop a market for capers. This process was based on some elements of the Participatory Market Chain Approach (Bernet et al., 2006). To ensure the continuation of the process, we decided to organize this workshop in the Jabal al Hoss region, where the Rural Community Development Project of the UNDP and the Syrian Ministry of Agriculture and Agrarian Reform (RCDP) is operating and communities are engaged in caper collection. The partnership with ICARDA was also fundamental thanks to their expertise in the application of participatory approaches in agricultural research.

Jabal al Hoss is a rural region located 15 km South-East of Aleppo in the North of Syria and considered as one of the poorest in the country (UNDP, 2000). The area is characterized by drought and a scarcity of water resources, arable lands and public services similar to many other remote rural areas in Syria.

The involvement of a development agency – in this case the RCDP – in the organization and realization of the multi-stakeholder workshop was crucial to create ownership of the process for this developing organization to ensure a better follow-up of the activities for the benefit of the poorest.

During the workshop we discussed the obstacles envisaged in the development of a caper market and how to develop a Syrian product, produced and processed in Syria by local communities' members and then further processed and marketed by Syrian traders and businessmen in Syria or abroad. Throughout the meeting, people who were either potentially or actually involved in the caper market in Jabal al Hoss, could share their interests, problems and ideas. This increased dialogue and trust so that they could develop a more profitable market through better cooperation. Moreover, the meeting served to raise awareness of developing organizations, government officials and private sector of the existence of this natural resource and of the problems and potentials associated with its market.

Organization of the multi-stakeholder workshop

To begin, a wide range of stakeholders from the caper market chain and representatives of research institutes, the interested government officials and NGO's were contacted. Several participants expressed their concerns about existing conflicts among market chain actors. Some market chain actors even made their participation dependant on the non-participation of another actor. We tried to overcome these general concerns through explaining in detail the meeting process, its focus on sharing interests among stakeholders and the working group's methods according to the participants' interests. A general rule followed through the whole meeting process was that the subject "prices on different levels in the market chain" was always avoided so as not to create conflicts among actors. At the stakeholders' meeting, only the prices of the displayed products were given, showing a big gap between Syrian vs. European final products.

We chose to organize the participatory meeting in Roweheb, one of the villages in the Jabal al Hoss region, in a tent put up for the event to be closer to the people engaged in caper collection and to their environments. In this way, we ensured the participation of more collectors, among which, some women, who, would not have attended the meeting if it had been held in Aleppo, or far from their villages. With this gathering we started a process to organize the market

chain from inside the chain, to increase the benefits accruing to the actors, in particular the poorest.

At the end, the stakeholder meeting brought together about 45 people from different sectors involved or potentially involved in the caper market chain, such as local collectors (men and women), chief collector, traders, processors and exporters, national researchers and academics, developing agencies representatives, and representatives of government bodies.

Process and results of the multi-stakeholder workshop

The meeting started with sharing and discussing information, with a few presentations on the caper plant and on the market chain from different perspectives, data on the world caper market and some information on successful cases of marketing capers in Italy. Moreover, aspects involving the nutritional and medicinal value of the caper buds and other parts of the caper plant used in Syria in traditional medicine were presented by participants at their initiative. The caper cultivation practices were also documented.

The second part of the meeting consisted of participatory discussions about potential and constraints in the development of a market for capers in Syria, using cards given to the participants to indicate their opinions on a board. The opinions were then ranked by the facilitators. Cultivation was considered the most important potential. The reason for this might be that, through cultivation, the benefits for collectors or farmers can be increased, work conditions may be improved and at the same time the quality of the product as indicated by uniformity of the buds and timely harvest can be improved. The increase of awareness on the use of capers in Syria was identified as a major opportunity to develop a local market, while quality processing in Syria involving a certification of the product was considered a potential for the export market.

The major constraints identified by the participants were the collection difficulties due to thorns in the plant and the heat during the harvest season (summer months in Syria) as well as the lack of marketing knowledge, storing facilities and any kind of coordination and/or organization among collectors and with other market chain actors. The low prices and their great fluctuation, as well as the existence of hindering export regulations, were other constraints that were pointed out by the participants.

Following the identification of the potential and the obstacles to the development of a caper market benefiting all the actors involved, and in particular the more vulnerable at the top of the chain, participants discussed in working groups the policy support needs, the cultivation opportunities and the organization of a wealthy market chain. To structure the group discussions, for each group the identical posters to be filled in were prepared. The organizers first explained shortly the procedure of the group discussion. After that, the group identified a facilitator and a reporter to write on the poster, and to present the results in plenary. As displayed in Figure 3 the first poster contained a section where the group members were asked to put their names.

Theme of the group			Potentials to overcome the constraints	Needed action	Who	Assistance needed
Group members						
Collectors	Traders / Processors	Researchers				
Constraints						

Figure 3: Structured poster for group discussions in the multi-stakeholder workshop

Below that, all the constraints for the topic of the discussion group were listed. On the second poster the participants had to list the potentials that could help to overcome the stated constraints, the activities that would be needed to realize the potentials, the market chain actor, who should be responsible to carry out the listed activities, and if appropriate, the institution sought for assistance to better carry out the activities, where considered necessary. The working group results were presented and discussed in plenary in order to develop concrete actions that would be needed to develop of a caper market in Syria.

Results of the workshop

A lack of cultivation and the lack of knowledge about cultivation practices were thought to be the greatest constraint to the development of the caper market in Syria. There was general agreement that with a selected quality and spineless cultivar, problems in collection and supply would be overcome. Control and certified organic production is an important option that has to be considered to obtain higher prices in export markets. Research studies on the best cultivar of caper for Syria in terms of agronomic suitability and organoleptic properties and taste of the flower buds should be promoted and supported by the national research organizations and universities. The cultivation of caper plants also implies a revision or clarification of the laws regulating the use of products from wild forest plant resources. Furthermore, the use of state land at the border of the Badia that might be used for caper cultivation should be taken into consideration for establishing caper cultivation. Furthermore, an improved cooperation among market chain actors could help in achieving better market access and higher market power for collectors, as well as enhanced market transparency. It could also improve trust among actors so that traders could rely on a stable and timely supply. If the creation of farmers' groups is envisaged, this process should be supported by local development agencies within the frame of their programs (ex. RCDP in Jabal al Hoss expressed interest in including the creation of caper producers' organization in their community development project). The need to develop a quality control product for the export market was emphasized by the participants, but awareness of quality control has to be improved to make such a product work. And finally the idea was

mentioned that local consumption should be promoted given that the caper buds are an accessible biodiversity resource in harsh environments, and are very rich in nutrients. Hence, food fairs could be effective in raising awareness on the use of capers in local traditional cuisine.

Lessons learned

A general lesson that can be learned from the organization of this workshop is that engaging in a multi-stakeholder process to reorganize the market chain of a specific product and bringing different actors together led to a wider awareness on the market issues related to the product at different chain levels and to an increased quality of dialogue and trust among collectors (women too), traders, processors and exporters, national researchers, development agencies, and government officials. And this can be a first step in fostering the collaboration needed to reorganize a market benefiting all the actors. Nevertheless, the organizing process is a very challenging task and needs considerable commitment and consistency by the organizing institutions. For the organization and realization of the workshop it is very important to involve a developing organization that can provide the follow-up after the workshop and ensure the continuation of the multi-stakeholder process. It is equally important that the organizers have a good knowledge of the local market chain based on applied research and can provide information on successful cases to make the actors aware of existing opportunities and elaborate on those. On the other hand, trying to imitate a successful product developed in a different environment can lead to failure, also due to an oversupply on the market.

Market chain actors often try to protect their knowledge and are not necessarily willing to share it with other actors as they fear diminishing profits or even being ruled out. It is therefore important to build on the potential of a product and as a first step to identify a common ground of interest that can be used to stimulate the will for cooperation. The results of the meeting clearly show the potential of such a multi-stakeholder process for market chain reorganization.

Conclusions

The lessons learned from this pilot case study that can build upon can be summarized as follows:

1. Attention should be paid to products that can be derived from the local biodiversity, and that are often easily accessible to the resource poor. However, to improve the livelihoods of the poor communities managing these resources, and to exploit the economic value of the diversity, market values have to be enhanced. This case study supports the argument of the need of enabling policy environment supporting public and private sector partnerships for the benefit of the resource poor, to implement the “pro-poor market” approaches already adopted by some developing organizations (Hellin and Higman, 2005).

2. To attain better results in developing the market value of these products, applied research carried out combining market chain analysis and livelihoods strategy should be carried out with the participation of all the actors engaged in the chain. To foster an increase in the income generated by an enhanced market value of biodiversity, understanding the nature and the degree of the involvement of the people engaged in the market chain is fundamental. Moreover, to understand the driving forces that can keep these stakeholders occupied with these activities, and the constraints limiting the full commercial deployment, it is necessary to analyze the process in which biodiversity products enter into the market and how the stakeholders use these species to contribute to their livelihoods and recommend the interventions.

3. Engaging chain actors to reorganize the market chain and stimulate their interest and trust is a very challenging task. A high level of commitment and consistency on the part of the coordinating organization is needed and it is important that research and development agencies work hand in hand to identify a common ground to stimulate a will for cooperation among all the chain actors.

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