

## Amaranth farming: Rural sustainable livelihood of the future?

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### Abstract

*Though amaranth has been studied intensively for its exceptional nutritional properties, little has been reported about its capacity for fighting poverty, securing food supplies, turning migrations, or its impact on the environment and the prospect for improvement of living conditions of those farmers cultivating amaranth. This paper addresses possibilities and limitations that Mexican small-scale farmers are facing to enhance sustainable livelihoods in the amaranth value chain. The study reveals that amaranth, as an alternative crop and livelihood, is perhaps one of the most complete endogenous natural resources that small-scale farmers have to combat the above-mentioned problems. The study identified several local and regional barriers for increasing the level of farming, production, processing and consumption. A striking and paradoxical limitation is the monopolization practices developed by some of the associations in relation to knowledge and technology transfer, seeds distribution and contact to potential national and foreign buyers.*

### Introduction

The rural areas of Mexico are hosting 60.7% of the country's extreme poor. Currently 25% of the Mexican population is undernourished, most of them are children from 0-5 years old (CONAPO 2006). The rural poor live mainly in the central and southern regions of Mexico, which have witnessed massive migration, economic instability, environment degradation and paradoxically, most of the small-scale organic farmers are currently located here, and that includes *the farming of amaranth too*. So why, when amaranth has been suggested as an alternative crop by The Food and Agriculture Organization of the UN to combat poverty and undernourishment 30 years ago, do the farmers still suffer from these problems? Our study (Bjarklev 2007) discusses the following question: What are the possibilities and limitations that small-scale farmers in Mexico are facing to enhance sustainable livelihoods in the amaranth value chain? We defined sustainable livelihoods as "the capabilities, assets (*capitals*) and activities for means of living. A livelihood is sustainable, when it can recover from stress and shocks and can maintain and enhance its capabilities and assets both now and in the future, while not undermining the natural resource base" (Carney 1998).

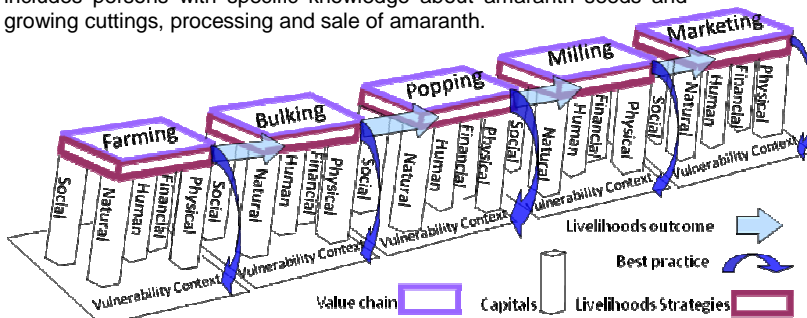
### Materials and methods

The study was based on the Sustainable Livelihoods approach (Dalal-Clyton 2003), Value Chain (Sturgeon 2001) and Clusters theories (Porter 2000). On that basis we constructed the analytical model shown in Figure 1. We analysed the context of each of the links of the amaranth value chain. These are supported by five types of *capitals*: human, financial, economic, natural and social, that either limit or enhance the capacity for development of each link of the value chain. The dimensions of sustainability are given by the enhancement or reduction of the capitals possessed by

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the actors. We conducted 25 in-depth individual interviews with actors involved in the Mexican amaranth value chain, 17 of which were tape recorded. We selected two cases in Central region of Mexico that traditionally cultivate amaranth: Sociedad Mexicana de Amaranto (conventional farming) and Quali (organic farming), both promoting the cultivation of amaranth as an alternative crop and livelihood for small-scale farmers. Our focus in this paper will be on Quali. Quali is an umbrella cooperative formed by non-farmer members from an NGO called Alternativas, but includes persons with specific knowledge about amaranth seeds and growing cuttings, processing and sale of amaranth.



**Figure 1: Schematic links in a value chain based on sustainability dimensions.**

Though the intention was to get in direct contact with the small-scale farmers associated to this cooperatives, and although the cooperatives had agreed to that beforehand, the representative of both associations deliberately did all to avoid direct contact with the farmers associated. Due to the rejection of establishing contact with the associated small-scale farmers, interviews were conducted with 6 small-scale amaranth farmers that did not belong to these cooperatives in Puebla, Tlaxcala and Mexico City. In the Mexican value chain we also talked to small-scale manufacturers and small-scale sellers, representatives and researchers from Mexican State institutions, as the latter have regular contact with the mentioned cooperatives. In Europe we interviewed whole dealers, Kaffeklubben (a Danish fair trade consumer association) and CARITAS Denmark. Derived from the analytical model, we structured the project in five main sections as follows:

## Findings

What it is the amaranth farmer's current contextual situation? The small-scale farmers conserve a huge diversity of amaranth varieties and, therefore, one of their main resources is the biodiversity. They also conserve traditional indigenous knowledge about farming the land and it opens possibilities for an easy adoption of *organic farming* principles and thereby possibilities for export to the EU market. However, the lack of infrastructure to capture rainwater and information on when and how to optimally irrigate amaranth is limiting its cultivation and not least prospects for increased yield. Quali representatives expressed that the organization has an extensive experience on these issues; however, the results are not published. The small-scale farmers' main complaint in the region, where Quali operates, was the lack of water for irrigation. Amaranth tolerates droughts, saline soils, and half of the water required to produce maize and wheat. This makes amaranth perhaps one of the most valuable natural capitals for small-scale farmers in the central and southern region of Mexico, but the monopolization of knowledge by the cooperative limits its use.

What are small-scale farmers' main strengths and limitations? Though the representative of the cooperatives claimed to possess considerable knowledge about certification, technology, processing, marketing, and export, this knowledge is centralized and distributed unevenly. Sociedad Mexicana del Amaranto has made efforts to communicate its results, but mainly through the Internet reaching only the already well-established farmers. Quali *does not publish* its results and according to government institutions even its associated members (the small-scale farmers) have difficulty accessing knowledge and information about amaranth farming. Quali does not allow its associated small-scale farmers to self commercialise amaranth products (not even locally) and the organic certification does not follow the farmer, if he/she decides to be independent of Quali. According to the interviews with Quali's representative, the economic benefits derived from the sale of amaranth are not allocated directly to the associated farmers neither are they involved in taking decisions on the processing and trading links. The explanation was that associated farmers *are not part of the cooperative as owners or co-owners*. As a paradox, the results of this investigation indicate that farmers that are organized in producer cooperatives but independent of the mentioned associations *seem* to have better and direct access to *physical* and *financial* capitals. The interview with the Agricultural Secretariat in Mexico revealed that small-scale farmers access to *financial capital* is very limited, as the government programmes are directed to the agro-industry, because the literacy level, the lack of access to the Internet, and the variety of languages spoken by small-scale farmers, and not least because credits are directed mainly to the processing and trade link but not to the farming level. As such the government programmes work in favour of the cooperatives to become the channel for small-scale farmers to potentially capture part of the subsidies allocated for amaranth.

What strategies were adopted and how were they implemented? The support from the Mexican Government to research centres or universities is very restricted - therefore the potential for transfer of knowledge to the small-scale farmers is limited. The main actors involved in the amaranth value chain in Mexico have been cooperatives or similar organizations focusing on the bulking of amaranth seeds, the processing and marketing of amaranth. The field study revealed that the cooperatives monopolize the knowledge about appropriate farming techniques (labelled the technological package by one of the cooperatives), certification and financial funding of projects related to marketing amaranth. The interviews with Mexican research institutes and government agencies indicated that Quali does not even distribute or share knowledge and experience among their own associated members, not to mention other cooperatives or local or regional research institutes. Similarly, the international cooperation is monopolized by a few organizations.

What are the main limitations and possibilities in the amaranth chain? The study revealed that the Mexican amaranth production is characterized by being controlled by national cooperatives. Lately, international companies have begun to penetrate the national amaranth value chain by establishing contact with Mexican small-scale farmers to set up a global amaranth value chain. One of these initiatives has been curbed by the dominant cooperative Quali who controls most of the national amaranth chain. Quali has made it impossible for external actors to get in contact with the small-scale amaranth farmers. According to the European dealers, the fact that the contact needs to be done through these cooperatives is linked to the fact that there is not a register elsewhere to find the small-scale organic amaranth farmers. Mexican small-scale farmers that have tried to expand the Mexican amaranth chain have experienced difficulty in accessing the European markets due to the high standards on labelling, product information and quality control. There are many potential branches

in which the amaranth production can be diversified (e.g., oil or milk). The diversification and the conservation of the already existing ones *depend on a sure and sufficient supply of seeds*. In this relation, the small-scale farmers confront a series of limitations such as: low yields due to limited research and information about crop varieties and techniques, and an ineffective distribution of already improved varieties due to monopolized practices of the mentioned cooperatives. These practices undermine the small scale farmers' social capital. The interviewees voiced that they felt betrayed by the cooperatives and had difficulty in trusting any such organization.

Where can changes be made and what can be done to enhance small-scale farmers capitals in the amaranth value chain? The amaranth production chain may today be characterized as producer-driven, since there is little consumer knowledge about amaranth. Besides there are no amaranth consumer associations in the national market – or in the EU market. The existence of such associations could secure the amaranth small-scale farmers more influence in the value chain. Taking into account cluster theories, revealed that the Mexican government is currently focusing on the processing phase. However, targeting the *farming phase* and in particular the small-scale farmers should be given priority in order to support the whole farmers' influence on the amaranth value chain.

## Conclusions

Initiatives that support the small-scale farmers active participation in the cooperatives are vital for ensuring the fair distribution of knowledge (human capital) and ensuring consumers more information about amaranth and small-scale amaranth farmer's welfare (a positive capitals outcome in their livelihoods). The monopolistic practices favoured by the cooperatives in the amaranth value chain are actually setting the strongest barrier for expanding the amaranth production and for furthering a sustainable livelihood for small-scale amaranth farmers. Consumers' associations both at the national and even more important in the European markets could reverse this pattern if they demand a more active and tangible participation of the small-scale farmers associated to cooperatives controlling the national amaranth value chain. The Mexican government could play a more active role supporting small-scale livelihoods by setting higher demands to cooperatives in order to include effectively small-scale farmers as real partners or co-owners. Considering the whole value chain: from *farming* to the final consumers, and not only the manufacturing process, is vital for furthering sustainable livelihood in amaranth.

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