

**Assessing sustainability of organic apple orchards**  
**The case of small scale apple production in Ningxia Province, PR China**  
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## **I. Summary**

China produces 43% of the world apple supply, but low fruit quality remains a problem for export of table fruit. Ningxia province is also facing challenges such as low soil fertility, poor orchard infrastructure and inadequate institutional support for small-scale apple producers. The study was carried out to assess a. the sustainability of organic apple orchards and b. the potential role of Organic and Fair Trade certification to contribute to farm sustainability and improve socio-economic outcomes of organic apple production.

## **II. Background**

In Ningxia, most apples are produced in small scale family owned orchards, and hence organization and mobilization of the apple growers is a challenge for standardized organic production. Due to urbanization and rapid economic growth, it is not attractive for young people to take over their parents' ageing orchards in rural villages. Temporary migration of male workers to off-farm activities during years with low yields also compromises farmers' investments in fruit production. Moreover, inadequate institutional support for organic inputs, organic subsidies and technical assistance to apple growers prevent farmers from fully living up to agro-ecological and organic principles. Under these conditions, sustainability of organic apple production in the region is jeopardized.

## **III. Main Results**

An important result of the analysis is that "sustainability" is not a very well-known concept among the assessed organic apple growers. Ecological sustainability of the orchards is challenged due to poor farm biodiversity, which lack ground ground-cover plants and lack of diversified planting materials. Over more, excessive application of imported nutrients should be tackled urgently. Other weak ecological indicator values are mostly due to the use of flood-irrigation that causes large water losses and sub-soil compaction. In spite of the lack of support from regional organic networks, the organic apple growers try to integrate the new organic practices and production standards into their traditional knowledge. Organic apple production was found to be socially sustainable with a positive performance in quality of life and more diverse forms of farm cooperation such as collective purchase of inputs and marketing. Economic viability shows great variations between the farms. It is difficult for organic apple growers to find a balance between agro-ecological and economic requirements. Organic production requires higher labor inputs and production standards are more difficult to comply with, but farmers generally receive low organic premiums for their organic products. Hence, most farmers in the apple project are searching for an alternative market for high-value organic apples that can generate better economic returns.

## **IV. Conclusions**

To sustain the organic apple production in Ningxia Province, interventions on an institutional level are essential to provide a more viable development pathway for the organic value chain. Moreover, the companies and the farmers should work hand-in-hand in order to scale up organic apple quality that is competitive for higher premiums. The cooperative can also assist farmers to diversify their production to secure farmers' income during years with low apple-yields. In addition, farmers need to be motivated to increase their orchard's ecological resilience. In any case, it is essential to increase the ecological, economic and social sustainability of the organic apple value chain if it is to persist on the medium -long term.

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