Chapter 6

Conclusions and recommendations for smallholder dairy development

Pictures on this and previous double page: Transportation (Pictures by: Torsten Hemme, Otto Garcia and Katja Seifert)

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Conclusions

It is estimated that some 12-14 percent of the world population, or 750 to 900 million people, live on dairy farms or within dairy farming households. According to a recent report (Chen and Ravallion, 2008), in 2005 about 2.6 billion people in the developing world (48 percent of the total population) were surviving on less than US$2 per day and about 149 million farm households, mostly smallholders, kept livestock for the purpose of producing milk for self-consumption or sale. Against this background, the current study set out to assess whether:

- small-scale milk production can contribute to significantly reducing poverty and improving nutrition and food security; and
- small-scale milk producers will be able to compete with large-scale, capital-intensive 'high-tech' dairy farming systems, such as those in the USA and other developed countries.

The various analyses and case studies conducted indicate that:

- small-scale milk production not only improves the food security of milk-producing households but also helps to create numerous employment opportunities throughout the entire dairy chain, i.e. for small-scale rural processors and intermediaries. As such, dairy development may serve as a powerful tool for reducing poverty and creating wealth in rural areas; and
- as small-scale milk producers incur low production costs, if well organized, they should be able to compete with large-scale, capital-intensive 'high-tech' dairy farming systems in developed countries.

Given the increasing 'interconnectedness' of global agriculture, the ability of smallholder milk producers to participate in the dairy market in a profitable manner depends not only on their own competitiveness, mainly determined by their production costs, but also on the efficiency of the dairy chains to which they belong. Therefore, recommendations for smallholder dairy development must perforce include strategies to develop and increase competitiveness in all segments of the dairy chain, namely, input supply, milk production, processing, distribution and retailing.

The best way to plan and subsequently implement any dairy development strategy for smallholders is to use a practical, step-by-step approach that breaks the complex task down into manageable components to be addressed in a logical sequence. The SWOT (strengths, weaknesses, opportunities, threats) analysis is a strategic planning tool widely used for ex ante assessments of projects or business ventures. Based on the information collated in this publication, a SWOT analysis of smallholder dairy farming identifies the following:

Strengths

- **Low production costs:** despite their low-yield farming systems, smallholder dairy farmers are among the world's lowest-cost milk producers.
- **High farm income margins:** with very few exceptions, smallholders achieve comparatively high farm income margins (20 to 65 percent) on their farm returns.
- **Low liabilities:** except for China, smallholders in all the developing countries covered by the study operate their dairy farms with less than 10 percent liabilities.
- **Low liquidity risk:** smallholders incur low production costs and face little risk of cash flow deficits for the dairy enterprise.
- **Relative resilience to rising feed prices:** as a general rule, small-scale farming systems use only small amounts of purchased feed. As a result, they are more resilient to price fluctuations for dairy feed compared with their larger-scale high-input/high-yield competitors (mainly in developed countries).

Summing up: small-scale dairy farming systems are cost-competitive and resilient to market fluctuations/shocks, which gives them a unique opportunity to serve as a competitive source of milk supply.

Weaknesses

- **Lack of knowledge and technical know-how:** smallholders lack the skills to manage their farms as 'enterprises'

- **Poor access to support services:** farmers in developed countries have access to support services ranging from production and marketing advice to support in family issues, which enables them to focus on what they do best and to buy-in the knowledge and skills they lack. Such services are usually lacking in developing countries or are difficult for small-scale farmers to gain access to.

- **Low capital reserves and limited access to credit:** the household absorbs the dairy income to cover its basic needs, leaving the farm with little or no capital to reinvest in the dairy enterprise or other profitable activities. Formal financial institutions tend to consider smallholders as high-risk/low-return clients. Therefore, as a general rule, the only way for smallholders to obtain credit is to resort to local moneylenders with their high interest rates.

- **Low (labour) productivity:** small herd sizes, which do not warrant investments in labour-saving equipment, combined with low milk yields result in poor labour productivity on smallholder dairy farms.

- **Poor milk quality:** the practices and conditions under which smallholders and their dairy chains operate make it difficult to deliver high-quality milk to dairy plants.

Summing up: the overall weakness of small-scale dairy farmers is that they have been unable so far to take advantage of existing market opportunities.

Opportunities

- **Growing consumer demand for dairy products in developing countries:** driven by population growth and rising per capita consumption, the demand for dairy products in developing countries is increasing rapidly.
- **Likelihood of increased milk prices:** there is an indication that, in the long run, world market prices for dairy products will be higher than in 1996-2005. This will generate opportunities for dairy farming in general.
- **Major potential to increase labour productivity:** while labour productivity on smallholder dairy farms is currently low, it could be easily improved (above local wage rates) by adopting better farm management practices, expanding dairy herd sizes and increasing milk yields.
- **Potential to increase milk yields:** milk yields from smallholder dairy systems are generally rather low. However, there is significant potential for increasing yields and thereby boosting production efficiency, for example, by means of better feed rations, improved farm management practices, genetic upgrading, etc.
- **Employment generation:** compared with many other agricultural activities such as growing rice or wheat, milk production and small-scale processing are labour-intensive. This means that a significant number of employment opportunities could be generated along dairy chains in rural areas.

Summing up: significant opportunities for improving both demand (quantity and price of milk) and supply (major potential for improving the farming systems) appear to exist, which smallholder dairy farmers could tap into.

Threats

- **Policy support for dairy farmers in OECD countries:** massive policy interventions (price support, milk quotas, direct payments, investment support programmes, export subsidies, etc.) in developed countries create a competitive advantage for the OECD dairy sector. This penalizes dairy farmers in developing countries, where governments cannot afford to provide such policy support and are without the means to implement other protective measures to create a level 'playing field'.
- **Exposure to competitive business forces:** trade liberalization increasingly exposes smallholder dairy farmers to competition from large-scale corporate dairy enterprises that are able to more rapidly respond to changes in the market environment and with greater flexibility.
- **Under-investment in dairy chain infrastructure:** development of a sustainable 'milk shed' requires both a long-term perspective and substantial investments in the organization of the dairy supply chain. The risk is that initial investors may lose a large share of benefits accruing from their investments in the event other milk processors are able to take advantage of established infrastructures and simply give farmers better milk prices. This may discourage potential investors, to the detriment of smallholders.
- **Unsuitable dairy development plans:** from our observations, the majority of public dairy development plans tend to follow 'fashions' rather than a structured and strategic approach. The failure of any dairy development programme reduces the willingness of government organizations and NGOs to provide resources for dairy development projects.
- **Environmental concerns:** low-yield dairy systems in Africa and South Asia are estimated to have higher carbon footprints per 100 kg of milk produced than high-yield systems in the USA and Western Europe. The question of environmental sustainability is gaining ever-greater importance in agriculture, and the regulation of greenhouse gas emissions may pose a threat to smallholder systems.
- **Increasing consumer demand for food safety:** consumers in developing countries are becoming increasingly aware of food safety issues. The low milk volumes produced by smallholders lead to relatively high costs for meeting milk quality standards in view of the high fixed costs for dairy equipment investments. However, there are ways for smallholders to produce high-quality milk while at the same time containing production costs, an example being the village milk-quality project in Karnataka, India.
- **Succession on dairy farms:** it was found that farmers who had established a successful dairy enterprise had normally generated some wealth, part of which was usually invested in better education for their children. As a result, it is financially more attractive and more prestigious for the successive generation to seek alternative employment outside the sector rather than to develop the dairy farm into its next phase. Therefore, the dairy sector may well lose well-educated farmers with the necessary capital for further dairy development.
- **Increasing local wage rates:** labour costs become a constraint for small-scale dairy farmers when increases in dairy labour productivity do not match rising wage levels in their respective area. In that case, small-scale dairy farming becomes uncompetitive on the labour market.

Summing up: most of above-mentioned threats explain why small-scale dairy farming is not reaching its full potential. The last four threats in particular may constitute a significant challenge to small-scale milk production systems in the future.

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Recommendations

Global milk demand is growing by 15 million tons per year, mostly in developing countries. Once this increased volume of milk is being produced by small-scale dairy farmers, approximately 3 million jobs per year may be created in primary production. This presents a unique opportunity for building up a sustainable dairy chain that sources milk from smallholder dairy farmers to meet not only the demands of local consumers but also those of the world market. While capitalizing on this opportunity could generate significant wealth in rural areas and provide benefits to all stakeholders involved in the dairy value chain, it calls for a sound dairy development strategy.

To be successful, any dairy development strategy should be based on the principle of 'creating value' in every segment of the dairy chain. This means that every player in the chain (farmer, farm input supplier, milk traders, processors, retailers, etc.) makes a profit, i.e. the returns are higher than the costs. A well-functioning dairy chain also provides benefits to the consumer: she/he will be able to obtain more dairy products for the same amount of money or will need to spend less for the dairy products she/he consumes.

The formulation of a dairy development strategy is a complex task that involves a large number of stakeholders and calls for careful sequencing:

- Status quo analysis: the first step would be a status quo analysis of the dairy region of interest. This should include a review of development trends in milk production, current economics of the prevailing dairy farming system(s) and configuration of the dairy chain. An assessment of the milk production potential under certain conditions will be needed, and it would be useful also to compare the dairy region of interest with other dairy regions. This would facilitate the analysis of the status quo and identification of the (relative) strengths and weaknesses, threats and opportunities of the region.
- Stakeholder consultation: a critical issue here is to agree on goals for each segment of the dairy chain that 'fit together' and are mutually supportive. Once the strategic goals (especially of farmers and processors) are in line with each other, it would be desirable for local governments, NGOs and other potential partners to become involved and their capacities and roles in supporting the development process be considered.
- Ex ante assessment of dairy development programmes: before implementing any specific dairy development programme, a systematic ex ante assessment should be made of all aspects of the envisaged programme. This assessment should explore the benefit(s) and risks the programme would create for the target beneficiaries and identify elements that ensure the best input/output ratio. If systematically carried out, this step would significantly improve returns to investments in dairy development.
- Risk management: given the increasing volatility of milk and feed prices, there is a pressing need to incorporate risk management systems into dairy development strategies. This is especially important for the dairy farmers once they move from small-scale/low-yield operations to larger farms with more intensive production practices.
- Monitoring, evaluation and continuous strategy improvement: the world is rapidly evolving, and agricultural development is very dynamic with regard to farm structure, input prices, prices for milk and dairy products, consumer perceptions, etc. It is therefore not sufficient to start a dairy development programme with a sound strategy: it is also necessary to constantly re-assess the chosen strategy against changing external factors. A strategy that was successful in the past might lead to failure in the future.

There is a need for regular evaluations of each part of the dairy chain in a 'milk shed', and for comparison with counterparts in other dairy regions. This calls for professionals with backgrounds in dairy supply chain management and dairy farm economics. The knowledge created through such comparative studies should be translated into continuous adaptation of the dairy chain to changing circumstances so as to ensure the future prosperity of all the actors involved in the dairy sector.

India

Thailand