

**Improved Market Access and Smallholder Dairy Farmer Participation
for Sustainable Dairy Development
APHCA/CFC/FAO project CFC/FIGMDP/16FT**

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**Session 1 Paper: Competitiveness Framework for Asian Smallholder Dairy
Development**

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Introduction and Purpose (slides 1-6)

1-3. The short-term boom in world dairy prices combined with long-term growth prospects for dairy products in Asia presents a promising opportunity for strategies to include and upgrade smallholder participation in these markets. Smallholders and the national and sub-national (local) dairy value chains may be able to respond to growing market opportunities, but there is no guarantee of this outcome. This presentation is focused on how the FAO-CFC-APHCA team is working to develop a framework for understanding the ability of smallholder dairy in participating countries to respond to these opportunities. For the purpose of this project, we refer to the related abilities of value chain participants to respond to market opportunities, upgrade to meet new market requirements, address challenges posed by international competition, and to provide sustainable livelihoods to value chain participants as the *competitiveness of the smallholder dairy enterprise*.

4. This presentation outlines the elements the competitiveness framework, why it was developed, and how it was used by the three consultants you heard from this morning to produce some indicative results from three countries. In the next session, the consultant team will facilitate your working together to perform a rapid self-assessment exercise using this framework.

5. The competitiveness framework is a set of analytical steps that constitute a structured process for analyzing the current situation of smallholder dairy as an enterprise in any given national or sub-national marketplace in a way that can provide useful comparisons across the participating countries. Because the goal of the FAO-CFC-APHCA process is to develop a strategy that can enable participants to succeed in many different environments, it is also an attempt to develop a common language that can help with the discussion of common challenges and differences between markets. Thirdly, the framework is a tool for analyzing and comparing the actual current situation from the inside, rather than against a single benchmark of what is “correct.” It is based on the approach that all participants can experience improvements in smallholder dairy performance, though some countries may have more favorable overall conditions and greater success in the long-term. Finally, the framework is a method for identifying which models are most suitable to address and correct or overcome specific challenges, or to respond to specific opportunities.

6. If our the project’s work were only focused on scaling up existing models in a specific country, the framework would be less useful. If, on the other hand, we want to help participants from many different countries and contexts select the right models (or elements of models) to address the constraints that they face, we need to be clear on what factors the

models we are looking at can address, resolve, or improve. The three goals served by the competitiveness framework are:

- 1) **Prioritization** of the most important deficiencies and opportunities in the smallholder dairy environment;
- 2) **Informed collaboration** among participants who face similar matrices of opportunities and challenges;
- 3) **Targeting models** to explore based on the specific challenges and opportunities participants face in their countries.

Feedback from some consultants has also suggested that the framework process has been useful as a discussion tool with national industry stakeholders, and in reaching new understandings regarding what industry participants see as the most urgent challenges of the environment.

Competitiveness Framework: Process (slides 7-11)

7-8. Using the framework entails a number of analytical steps. Mapping and diagnosis of the dairy value chain yields an understanding of the issues facing smallholder dairy. In the framework, these issues are categorized into a standard set of performance/competitiveness drivers that fall into five areas. Each issue is then evaluated for whether it is subject to the influence (or control) of (1) governments, (2) firms, (3) whether it is can only be partially controlled, or (4) whether it is entirely out of the span of control of local actors. The relative favorability or unfavorability of each issue is then determined (perhaps through discussions among a variety of stakeholders). Existing models are then evaluated and scored for their effectiveness in addressing the constraints of the environment. In this way, the framework helps us understand what elements of specific models provide solutions to our specific challenges, and what challenges require new policy and organizational innovation. It is our hope that the FAO-CFC-APHAC project will be a forum for assisting the dissemination of existing models, and for new policy and organizational innovation.

9-10. The five Performance-Competitiveness Drivers categories are (1) demand conditions, (2) factors of production and utilization, (3) market and competitive structure, (4) related and supporting industries, including producer services; and (5) government and business enabling environment. This category structure is derived from Harvard Business School Professor *Michael Porter's* diamond model of competitive advantage. In this model, the competitive results for smallholder dairy are viewed as a function of how well the key drivers work together to produce a sustainable and profitable industry. Of course, the choice of these issue categories is somewhat subjective: other ways of categorizing issues could serve a similar purpose, but because this model captures economic, technological, institutional, governmental, and market structure issues across the value chain, it serves as a useful framework for analysis.

11. In each of these categories, much of the analysis is subjective, but collecting the most important quantitative factors to describe the performance of the system is useful. Some of these measures, if collected and averaged out across the entire national market, could be quite misleading. As a result, some factors are much more useful in describing performance at the farm and enterprise level (those appearing to the left), and others, such as the demand measures fresh milk premium in a given country as a percentage of world market prices, are more useful in describing the national market environment. The team used this as a guide for

data collection, and are still exploring how a simple set of quantitative indicators can improve the framework's effectiveness.

Steps in Prioritizing Performance-Competitiveness Drivers (slides 12-15)

The competitiveness framework includes three steps in prioritization of identified performance and competitiveness drivers.

13. Keeping in mind what national-level policy and program interventions can realistically achieve is very important in regional strategy formulation. Analyzing the factors that can be controlled or influenced by participants in the APHCA project, and the limitations of policy action to influence some outcomes, and focus clearly on the opportunities for the next best step in each national (and regional) context. Project participants have a greater degree of influence and, potentially, control, over the conditions determining chain performance and smallholder participation and national market structures than over factors such as multinational firm strategies and the international trade system. As a result, the first step in prioritizing which performance and competitiveness drivers to address entails understanding whether opportunities and constraints can be controlled or influenced by government, by firms, those factors that are "quasi-controllable," and those that cannot be controlled.

14-15. The second and third steps in prioritization entails analyzing the drivers (identified above) to determine their relative influence on the competitive position of the value chain. This is accomplished by assessing their favorability or unfavorability to the smallholder dairy enterprise on a scale of -2 (Very unfavorable) to +2 (Very favorable), and assigning each issue a relative weight (importance) compared to other factors in a given category. Each category of issues (outlined in slide 9-10) represents a weight of 100%, and sub-factors are assigned a value reflecting their significance to the enterprise as a whole. By multiplying the favorability score by the weight, each sub-factor is assigned a positive or negative value, and the performance of the category as a whole can also be analyzed. The results for one category of drivers- Factor Conditions and Utilization- is illustrated in slide 15.

Framework Findings from Consultant Studies (slides 16-18)

16. The significant differences between the three countries studied are apparent in the chart on slide 15. According to this analysis, the challenges faced by each of the three countries differ significantly both within and across driver categories. While all three countries were reported to have favorable demand conditions, this was weighted as a much more positive factor in Vietnam, in light of the country's weaker dairy tradition. In all three countries, factor conditions and utilization were rated as a significant challenge. The studied countries diverged significantly with respect to the favorability of market structure and governance, related and supporting industries, and the regulatory and business enabling environment.

17. The most favorable sub-factors for each of the case study countries are presented in the charts on slide 16. While market size/growth and processing capacity are significant factors for both India and Vietnam, the Philippines' market structure appears to be a much significant strength upon which to build than in either India or Vietnam.

18. With respect to the greatest challenges identified in these case studies, there was almost no consistency of the most highly weighted factors across the three countries. This result reinforces the conclusion that it will be more effective for groups of countries facing similar challenges to work together within the project framework to achieve sustained upgrading and find solutions to common challenges.

Evaluating Model Effectiveness (Slides 19-20)

19. Evaluating and choosing models to scale up and/or replicate requires understanding what a particular model addresses well, and also a recognition that there may not yet be an appropriate model developed to overcome specific challenges or take advantage of current opportunities. The most fundamental question considered in the model evaluation step is, “whether a particular model *responds effectively to the specific, high-priority challenges and opportunities that smallholder dairy faces in my country’s environment?*” The framework uses a relatively simple scoring system to address this question.

20. Models effectiveness in addressing a few of the key opportunities and challenges is illustrated in the table. Two groups of issues are apparent. First, in four cases, where significant opportunities or challenges have been identified, at least one of the models offers a “very effective” or “somewhat effective” example of how to address the issue. These are shown in the top section of the table. In four other cases, significant challenges in the operating environment have been identified, but there is no clear evidence that the models examined have been effective in addressing these issues. Where this is the case, further innovation, rather than scaling up of current models, should be considered, and project participants may find the APHCA project an effective vehicle for working together to catalyze this innovation, whether it comes from policy, program, or private-sector initiatives.

The Rural Wage Rate as a Determinant of Smallholder Dairy Trajectory (Slides 21-25)

21. So far, our analysis of smallholder dairy competitiveness has looked at the system almost exclusively from the “inside”-- that is, from the perspective of upgrading what currently exists and assuming, rightly in most cases, that the performance of the smallholder dairy system can be improved if challenges are addressed appropriately and if the smallholder enterprise is organized to take advantage of opportunities. One factor that may be an overriding determinant of the trajectory (*direction, likely future development path*) of smallholder dairy is the evolution of rural wage rates. This work is based on an ongoing research program at ILRI and the work of Steve Stahl, who could not be with us today. It suggests that the rural wage rate context has been a key determinant of the scale at which dairy activities can be competitive. Rising rural wage rates make other activities more attractive and may tend to divert smallholders away from dairy enterprise. Dairy also becomes less attractive when non-financial benefits of dairying are reduced as mixed-crop farming declines. Considering these issues can help you target resources within your country more effectively and with a greater awareness of how rural economic development impacts the smallholder enterprise.

22. Some research has demonstrated that the attractiveness of smallholder dairy as a remunerative option declines quickly with rising rural wage rates. The basic outline of this argument, as presented resulting from a trans-regional study conducted in the late 1990s, provides some important insight into anticipating industry trajectories.

1)Smallholder dairy is labor intensive and arises where other remunerative options for labor are small. Dairy competitiveness relies on low opportunity cost for labor.

2)Herd sizes rise with rising rural wage rates and greater access to remunerative opportunities for family labor. When wages rise, smallholders may respond with capital investment, either in land for grazing (as an alternative to labor-intensive fodder), milking equipment, or other upgrades that reduce labor inputs, but also require economies of scale for profitability and sustainability. As a result, smallholder production may transition to more specialized, *small commercial* production in the context of rising rural wages.

3. High value of manure as fertilizer input, particularly in dense, low-yield subsistence environment(s), sustains smallholder dairying. In Kenya, researchers found that the value of manure produced in a small dairy farm may be <30% of the value of milk produced, based on the observed market values for both (Lekasi et al. 1998). Benefits from manure erode where wages are higher (or rise) because manure handling is a labor-intensive process.

4. Dairy provides savings and capital accumulation mechanisms for smallholders which may lose attractiveness as other formal-sector options become more widely available.

In the context of rising rural wage rates, it may be difficult for smallholders to remain competitive in dairy, since (1) some smallholders will abandon the hard work of feeding and milking cows and pursue other types of work, if these opportunities are available, and (2) those who do stay in dairy shift towards a different model of production that is more concerned with cash remuneration rather than the various forms of income and asset building that makes dairy attractive to smallholders in a mixed-crop environment.

23. The attractiveness of dairying as a remunerative activity appears to depend on low labor opportunity costs (as represented by low rural wage rates) and lack of access to other savings and investment vehicles. *Where opportunities for other use of labor are low, and where soil nutrients and land are scarce, smallholder mixed dairy producers successfully out-compete larger more specialized producers locally because they require lower formal financial returns from sale of milk.*

The implication of this analysis suggests that “next steps” for smallholders should be considered very carefully with respect to the rural wage context. Where rural wages are moving towards convergence with urban wages (though these cases may be somewhat rare), it is likely that the value of ‘other returns’ to milk production will decline (particularly manure), reducing both the competitiveness and the desirability of smallholder dairy production.

24. In these cases, encouraging smallholder strategies may be less favorable than considering other forms of local dairy enterprise development in which smallholders can participate, focusing on those that can reap the economies of scale required to make dairy a favorable option in a higher rural wage context.

A variety of likely and potentially appropriate growth trajectories, summarized in this table, should be considered after analyzing the competitiveness of the dairy production system and prior to selecting appropriate models to adopt. In this table, the rural wage context is considered alongside smallholder market access conditions to suggest 15 different scenarios for appropriate strategy development.

Conclusions and Next Steps

25. The measure of whether this framework is useful is whether you and your collaborators in-country find it to be of value. As a result, we hope that you will provide input into this “work in progress.”

In addition, another of the project’s goals is to develop an internet-based (online) or software-based system that allows you to search for models that have been effective in addressing specific constraints or challenges. This goal is one reason it has been important to standardize the categories in which the main performance-competitiveness challenges of different countries are captured in the framework analysis.