

7. USE INCREASES IN FARMER INCOME TO MEASURE RESULTS AND THESE INCREASES VERSUS PROJECT COSTS TO MEASURE COST-EFFECTIVENESS

Peter Drucker made 'If you can't measure it, you can't improve it' a dictum of good management. Poor farmers need to measure their increases in income in order to improve their business decisions and make the full transition from subsistence to successful commercial farming. In addition, this is by far the best measure for agricultural projects. And once project implementers measure increases in income, they can compare them to project costs and measure cost-effectiveness as well.

The Story

The coffee harvest was over and the farmers of Villa Nueva met outside Doña Marta's house to evaluate the results of the year.

Angela Sucuc explained the practice of evaluating results, and then she asked for a volunteer so she could demonstrate the practice. Doña Marta volunteered. Angela attached a list of all farming practices that the farmers had adopted throughout the year, and she asked Doña Marta which practices she adopted and to what extent. Had she pruned her coffee trees to 50% shade and 50% sunlight? Did she spray her trees against coffee leaf rust? Did she fertilize her trees three times during the growing season? For each of these practices, there were 20 of them, Doña Marta answered whether she adopted them or not and by how much. She had two quarter acres of coffee, so she answered whether she applied the practices on both quarter acres. Angela did this on a big sheet of paper taped to the wall of the house so everyone could see the results.

This took about 15 minutes, and by the end of the period, Doña Marta had given a fairly complete picture of all the practices she had adopted to improve her business decisions, conserve her hillside land, and increase her productivity, price, and income.

Then Angela asked her what her productivity was for the coffee harvest that had just ended. She asked how much coffee Doña Marta had husked and sold to exporters, how much she husked and sold to local buyers, and prices she received. Then Angela helped her calculate her gross income for the coffee year, her out-of-pocket (cash) expenses, and her net income. Angela also asked Doña Marta for last year's productivity, husking, prices, and income. The calculation of income was done on a big sheet of paper as well, and everyone saw the practice of evaluating results.

Angela handed out sheets of paper with the business and farming practices and format for calculating income, and each farmer evaluated their adoption of practices and increases in income. This took an hour, and farmers needed help with the calculations. But some had brought their children who helped; Angela also helped; and eventually everyone did it.

Then Angela used another big sheet of paper with the list of business and farming practices that farmers adopted throughout the year, and she asked how many farmers adopted each practice. Then she used a second sheet, and a fair amount of discussion, to calculate average increases in productivity, husking, prices, and income. This provided the basis for discussing where the community was strong and where it was weak and the priorities that needed to be addressed in the new coffee year.

After the meetings in each community, project staff added up the results and computed the adoption of the business and farming practices, the average productivity, amount husked, price, and income for the project as a whole. They compared the gross increases in income to those of the previous year and calculated the increases in income achieved during the year. Then they recorded the project costs for the year, calculated the cumulative increases in income and cumulative project costs, and computed the ratio increases in farmer income versus project costs.

USE INCREASES IN INCOME TO MEASURE RESULTS

Farmers Need to Measure their Increases in Income. We Should Help Them.

Income is the best measure for farmers, especially net income, because this is their goal. They may still grow their own food; but they want an income as well. There are not enough jobs with salaries in developing countries, and poor people have to make their own jobs. In cities, they make them in services and small-scale manufacturing. In rural areas, most have land and a tradition of farming, and they make them in agriculture. The farmers would like to increase their income, and measuring it is the first step toward improving it.

Drucker's adage -- if you can't measure it, you can't improve it -- applies to small farmers even more than other businesses. They grow rain-fed crops such as coffee, cocoa, or quinoa. There is usually one major rainy season a year, and they receive most of their annual income at the end of the rainy season and harvest. They have one chance to measure results and improve efforts each year; and they have to make it count. Even dairy farmers, who produce milk daily and get paid every two weeks are guided by annual seasons because some improvements can only be adopted during the rainy season and others are best adopted during the dry season.

Measuring is actually evaluating -- why income did or didn't increase, what to do next -- and evaluating is complex work. Agricultural income depends upon variables such as land in production, productivity, post-harvest losses, product quality, value-added processing, and reducing out-of-pocket costs. Farmers make these evaluations, but often not very effectively. "Which variable provides the best opportunity for more income? And what practices do I need to adopt?" If a project provides technical assistance in adopting better farming practices, it doesn't take much effort to add a session on helping farmers evaluate their increases in income. But even if the project

only provides inputs, or infrastructure, the assistance in evaluating increases in income is a big payoff for the farmers for a small amount of additional effort.

Agricultural Projects Should Also Measure Increases in Income

Drucker's adage applies to agricultural projects as well. So what is the best measure for improving an agricultural project?

Agricultural projects are anti-poverty projects and if we want to see how successful we are in helping farmers graduate from poverty, then we need to measure increases in income to see how successful we are. We need to see if we are actually making a difference and what we can do to improve our results.

Also, while measures such as increases in productivity, product quality, or value-added processing are important, they are nonetheless partial measures and indicators of partial success. We undertake these objectives in order to achieve the goal of increasing income, and we need to measure the goal as well as the objectives in order to see if the rationales and logic for our projects were successful.

Increasing income is the goal of the farmers, and when we join them in this goal and its evaluation, we are improving the effectiveness of our projects for the farmers, ourselves, and our donors. The assistance in measuring increases in income, evaluating why it did or didn't increase, and deciding what to do next serves the farmers and our projects at the same time. The farmers learn why some of their efforts were not as successful as planned, and what they need to do next, and we learn what we need to do to improve our assistance to them.

Universally Applicable

There are lots of different types of agricultural projects. Input projects give farmers alfalfa seed for growing fodder to feed their dairy cows. Infrastructure projects build collection centers, access roads, and processing plants. Multi-purpose projects help farmers improve their health and nutrition or plant trees as well as increase income. And traditional agricultural projects that help farmers adopt the farming practices that increase their productivity, product quality, processing, and income.

We need a measure that is universally applicable to this great variety of projects and increases in income is the measure. All of these projects have one thing in common. Whatever they are doing is for the purpose of increasing income, whether it is a partial effort or a more complete one, income is universally applicable.

The chain of relationships that is the rationale for an infrastructure or input projects is also the means for measuring their success. Dairy cows on the Bolivian Altiplano give more milk when they are sheltered during the freezing nights, and infrastructure projects give them wood and tin roofing to build cowsheds. Did the farmers construct the cowsheds? Did they shelter their cows during the cold nights?

Did they increase their productivity? Did farmers increase their income? Alfalfa is a good fodder crop, and input projects give or subsidize the price of fodder for Peruvian dairy farmers. Did the farmers grow the alfalfa and feed it to their cows? Did the cows increase their productivity and farmers increase their income?

With Increases in Income, You Can Also Measure Cost-Effectiveness

Agricultural projects, like farmers, need to increase their productivity. And if you don't measure increases in farmer income, you can't measure productivity. Why? Because project costs are stated in terms of money, and if you want to calculate the productivity or cost-effectiveness of your project, you need to define the benefits in terms of money as well. We would like to know how many thousands of dollars of farmer income were produced by our thousands of dollars of project expenses. If we don't measure income produced by the project, we can't measure productivity.

Most agricultural projects have had limited success, and many have failed completely. Many have cost far more than the increases in income they produced. We are searching for what works and what doesn't, for project improvement, and for more results for project investment. And we can't get there if we don't measure increases in income and, thereafter, the cost-effectiveness of our projects.

USE INCREASES IN INCOME VERSUS PROJECT COST TO MEASURE COST-BENEFIT

The Rationale for Measuring Cost-Effectiveness

The performance of an agricultural project can be measured in two ways. First and foremost, by how much it helps farmers increase their income. However, there is a cost to helping the farmers make these increases, and we need to help farmers make them at least cost. We are using public funding -- governmental funding, tax-exempt donations, and foreign aid -- and we don't want to waste the funding.

Thus, the second measure of performance or productivity is the increases in income a project produces versus the cost of producing them. A project that helps farmers increase their income by \$100 a year at a cost of \$50 per farmer per year is a lot better than a project that helps farmers increase income by \$100 a year but costs \$100 per farmer per year. Funding for agricultural projects is limited, and there is only enough funding for 15% to 20% of farmers at any time. The first project can help twice as many farmers for the same cost.

Drucker's adage applies once again. We want improvements in cost-effectiveness as well as project results, and we are going to get them unless we begin measuring them. The second measure of performance -- the cost of producing the results -- is the true measure of productivity and the most complete measure of performance. And if project staff calculates the cost-effectiveness of their projects at

the end of each year, it will help them look for effectiveness and efficiencies in two directions: methods that increase results and efficiencies in expenditures that help them do so at lesser cost.

The Two Ways of Measuring Cost-Effectiveness

Project implementers can calculate increases in farmer income versus project cost in two ways. First, as the ratio of the increases in income produced by the project to project costs. Second, as the rate of return, which is the rate or percentage which discounts the stream of income produced by the project to the stream of project costs.

The ratios of increases in income to project cost are more transparent and easier for project staff to calculate and understand. Also, the method of calculation requires estimations of average farm size, productivity, post-harvest loss, difference in prices for better quality or processing, and it is easier to see the opportunities for increasing results and take decisions on doing so. Annex 1 is a calculation of the ratio for the project with coffee farmers on which Angela, in the story above, was employed.

However, the great advantage of increases in income versus project cost is that you can calculate either the ratio or a rate of return, whichever the project implementer or particular donor prefers. Once you have the numbers for the increases and the costs, you can calculate either or both. The important point is that they should be calculated at the end of each year, both for the year and the cumulative duration of the project, and used to improve the results of the project in the next year.

The Closing

The majority of project implementers -- governments, Non-Governmental Organizations (NGOs), and foreign aid contractors -- do not measure increases in farmer income. As such, they are greatly limiting their ability to improve their projects. Fortunately, it does not take much additional effort or cost to do so, and the benefits in more results and cost-effectiveness are well worth the effort and cost.