COADY

# COMMUNITY ECONOMIC LITERACY AND THE "LEAKY BUCKET"

Coady International Institute
Occasional Paper Series, No. 9

March 2011

Gord Cunningham

# COMMUNITY ECONOMIC LITERACY AND THE "LEAKY BUCKET"

Coady International Institute Occasional Paper Series, No. 9
March 2011

**Gord Cunningham**

## Igniting Leadership

The Coady International Institute is a unique, world class leader in community-based, citizen-driven development education. In collaboration with global partners, the Coady Institute is committed to advancing community self-reliance, global security, social justice, and democratic participation. Through innovative and effective adult education approaches, the Coady Institute provides community leaders with the knowledge and practical tools needed to bring about the change they want for themselves. Today, thousands of Coady graduates and partners are working with people in 130 countries to build a fair, prosperous, and secure world.

ISSN 1701-1590
© Coady International Institute
Creative Commons Attribution-NonCommercial-ShareAlike 2.5 Canada License
http://creativecommons.org/licenses/by-nc-sa/2.5/ca/

All or parts of this publication may be copied and distributed for non-commercial purposes without requesting written permission, provided the author(s) and the Coady International Institute are explicitly acknowledged as the source of the material. Any work adapted from this material must also be made available to others under identical terms.

The Coady International Institute
St. Francis Xavier University
PO Box 5000
Antigonish, NS
Canada B2G 2W5

Phone: (902) 867-3960
Phone: 1-866-820-7835 (within Canada)
Fax: (902) 867-3907
Web: www.coady.stfx.ca
Email: coady@stfx.ca

# Contents

## Biographical Note

Gord Cunningham has more than 25 years of experience in community economic development and community-based microfinance in Canada and internationally. At the Coady Institute, he is involved in several collaborative action research initiatives in Africa and South-East Asia exploring the application of asset-based and citizen-driven approaches to community development. Gord also teaches courses in community economic analysis and mobilizing assets for community-driven development. Gord has co-authored a number of articles addressing these topics in *The Canadian Journal of Development Studies* and *Development and Practice*. He is also the co-editor of *From Clients to Citizens: Communities Changing the Course of Their Own Development*, a collection of case studies across the world demonstrating how communities organize and mobilize around their own assets, published by Practical Action (UK) in 2008.

# Community Economic Literacy and the "Leaky Bucket"

*Mmeiputayu emala naudo kurum*
*(A big gourd with a hole in the bottom cannot be filled)*
— Maasai proverb

## Abstract

*This paper offers a "how-to" guide for constructing and using a popular economic analysis tool called the leaky bucket. By documenting its use for community-driven monitoring of the main flows of money coming into and out of the local economy, the paper shows how people at the grassroots can employ this tool to identify ways of improving the economic health of their households and communities.*

## Introduction

The leaky bucket is a popular education tool that helps people at the grassroots better understand their local economy. It enables them to identify and quantify the main flows of money coming into and out of their community. In turn, this process often leads to revealing economic opportunities, which may help community members improve their household and community well-being.

In the simple leaky bucket shown in Figure 1, the arrow at the top represents money coming into the community from outside. This money usually includes income from sales of goods and services or transfers from governments or family members. The arrows from the holes in the bottom of the bucket represent money leaving the community, typically in the form of expenditures on goods and services purchased outside. The level of water represents the level of economic activity: the fuller the bucket, the more money is circulating in the community and the healthier its economy. By identifying the main inflows and outflows, the leaky bucket can inform decisions to:

- produce and sell new goods or services;
- expand existing activities, either by producing more or by adding value to goods or services that community members are already producing; and
- change expenditure patterns by redirecting expenditures (for example, on alcohol or tobacco) or investing underutilized savings into more productive activities.

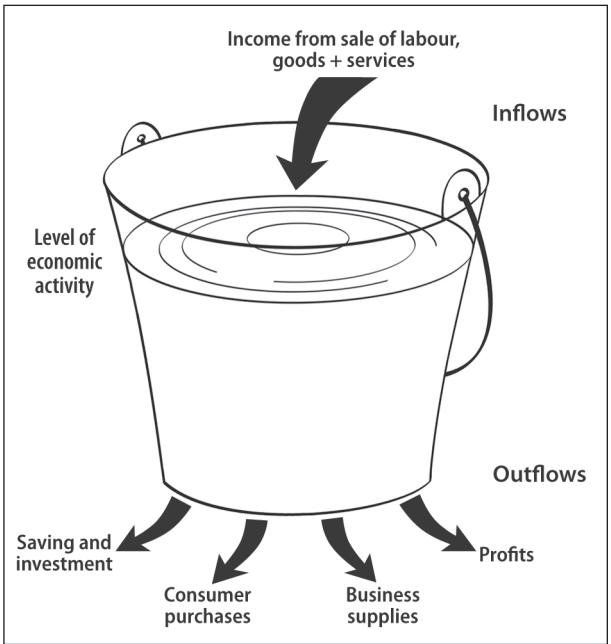


**Figure 1: Simple leaky bucket**

The tool also allows community members to track changes in their local economy over time, especially when these changes are related

to planned, community-driven activities. For example, it can show whether the local economy has diversified or whether particular economic activities have intensified. Perhaps the most important aspect of the leaky bucket is its ability to demystify basic economic principles in a way that is fun and engaging for people who might otherwise categorize themselves as "economically illiterate."

This paper offers a guide on how to construct the leaky bucket, as well as examples of different ways it can be used. The Ethiopian case shows a simple version where only the main flows of money into and out of the community are identified. The South African case represents an attempt to quantify the main inflows and outflows. These examples provide insights into when it is best to use each type of leaky bucket exercise and ways in which this tool can be used for community-driven monitoring and evaluation. Finally, the limitations of the leaky bucket tool are discussed.

## Context

A variation of the leaky bucket tool was developed by the author (Cunningham, 1990) in a First Nation community in Canada for research into the nature and extent of the local informal economy.

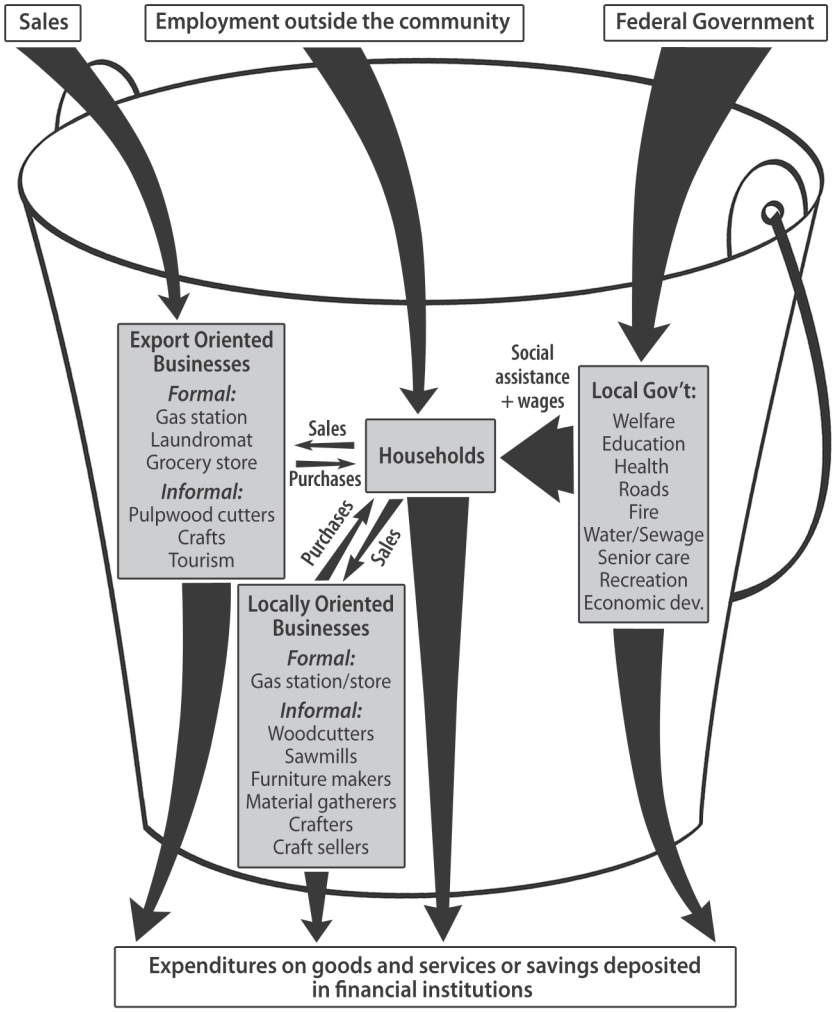


**Figure 2: Leaky bucket generated in a First Nation community (Canada, 1990)**

The thickness of the arrows depicted in Figure 2 represents the relative magnitude of the flows of money. During the late 1980s, the primary inflow of money into the community consisted of federal government transfers to the local First Nation government. Most of this money was distributed to households in the form of wages, services, and social assistance payments. The main outflows of money were expenditures by households on general consumer items purchased in a nearby town.

By examining the main inflows and outflows, community leaders saw the potential for the following initiatives:

1. A microcredit scheme to support informal handicraft and forest product enterprises that linked raw materials to finished products in a value chain (see Box 1 for details);
2. Tourism-related activities to increase the flow of income into the community, such as a small craft marina, sportfish outfitting and guiding, and the promotion of a major summer cultural festival—the "Pow Wow";
3. More local entertainment and shopping opportunities for residents to shop locally and to attract customers from nearby communities.

**Box 1: Microcredit scheme developed in a First Nation community (Canada, early 1990s)**

For handicrafts, money was being spent and re-spent locally with craft material gatherers selling to craft makers. In turn, the craft makers sold their wares to craft shop owners and travelling salespeople. Access to credit for craft makers made it possible for them to stockpile craft supplies when they became available (usually seasonally) and allowed for both increased and "smoother" production. In the case of forest products, woodcutters were selling to small local sawmills that re-sold this lumber to local carpenters, homebuilders, and furniture makers. Access to working capital made it easier for furniture makers and builders to take on new projects, and this resulted in increased demand for local sawmills and woodcutters. The success of this microcredit initiative in turn led the First Nation community to invest in a log home building business, which took advantage of the skills that already existed in the forest product sector and created a new value chain.

Building on the work of Hustedde, Schaffer, and Pulver (1984), Fairbairn, Bold, Fulton, Ketilson, and Ish (1991), and others, the leaky bucket has since been refined and adapted for various contexts, particularly by government institutions and NGOs in India, Ghana, Ethiopia, Kenya, South Africa, Nepal, and Vietnam. In Ethiopia, for example, the tool was introduced in 21 communities to help people identify "low hanging fruit"—activities they could undertake without any outside resources, at least initially. As a result of the leaky bucket exercises, community members undertook several new income-generating activities such as milk and potato production and the rehabilitation of natural resources through reforestation, restoration of eroded soil, and the transformation of pastureland to irrigated farmland. Other activities stimulated by the leaky bucket exercises included the construction of roads, bridges, schools, and other important local infrastructure.

Many former students of the Coady Institute have also reported adapting this tool for their community development work. In Ghana and India, for example, variations called "the leaky pot" and "grain storage pot," respectively, were used to stimulate community conversations about how

to add value to existing commodities, how to save and invest in new assets, and how to evaluate expenditures such as dowry payments. In Nepal, an NGO working with women's savings groups introduced the leaky bucket as a planning tool by using past, present, and future leaky bucket diagrams to show the kinds of economic changes they wanted to see in their communities.

## Constructing the Leaky Bucket

There are many ways to use the leaky bucket tool. The groups and communities mentioned above have all carried out the process of drawing and analysing the leaky bucket diagram differently. Nevertheless, they each worked from the following basic sequence of steps.

### *How to Construct a Leaky Bucket with a Community Group*

**Step 1.** Ask people to imagine their community economy as a bucket with income sources from outside the community pouring in from the top and expenditure on goods and services purchased outside the community spilling out of the holes in the bottom.

**Step 2.** Draw a picture of a bucket. Inside the bucket, draw three boxes representing the three main economic actors in any market economy:

- **Households:** all people living under one roof and sharing income and expenditures;
- **Local government;**
- **Businesses:** larger formal sector firms like plantations or horticulture operations that provide wage employment, or any other business located outside the household but inside the community. (Small-scale farming and other "home-based" businesses are usually included within the household sector.)

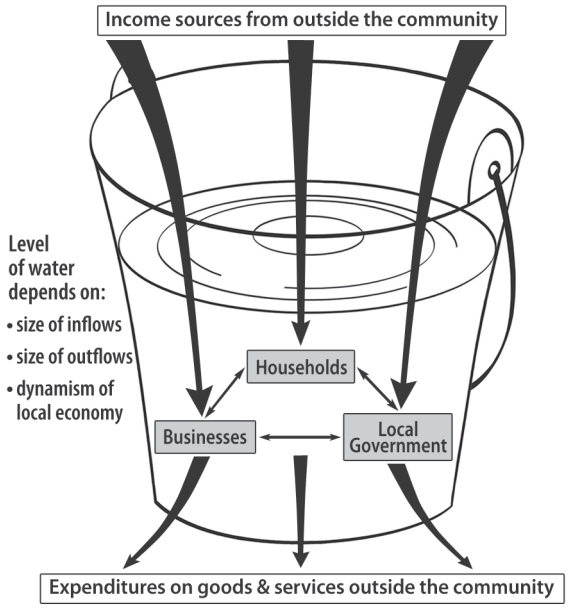


**Figure 3: Basic structure of the leaky bucket**

**Step 3.** Draw arrows coming into the bucket to represent income originating from sources outside the community. The arrows will begin at the top of the bucket and lead into the appropriate box: households, businesses, or local government.

**Step 4.** Draw arrows between the three boxes inside the bucket to show the financial interactions between the economic players these boxes represent.

**Step 5.** Draw arrows leaking out of the bucket from households, businesses, and local government, representing spending that is taking place outside the community.

Once the above steps have been completed, the drawing should look something like the diagram presented in Figure 3.

## *Practical Tips for Constructing the Leaky Bucket*

As a starting point, sometimes it is helpful to brainstorm and list all of the economic activities taking place within the community. For households, this includes the types of livelihood activities that people are engaged in during different seasons. Then, talk about the types of products and services that are produced or sold by local people. Discuss the proportion of goods that are purchased outside the community to those sold and consumed within the community. For local government, which may mean district or regional government, list the types of programs or services delivered. The main types of flows into and out of the community economy may look like those presented in Figure 4.

Most people have very little difficulty identifying the main inflows and outflows of their local economy. However, the internal flows between households, government, and businesses sometimes need explanation. For example, in a small village in Ethiopia, the business sector might consist of

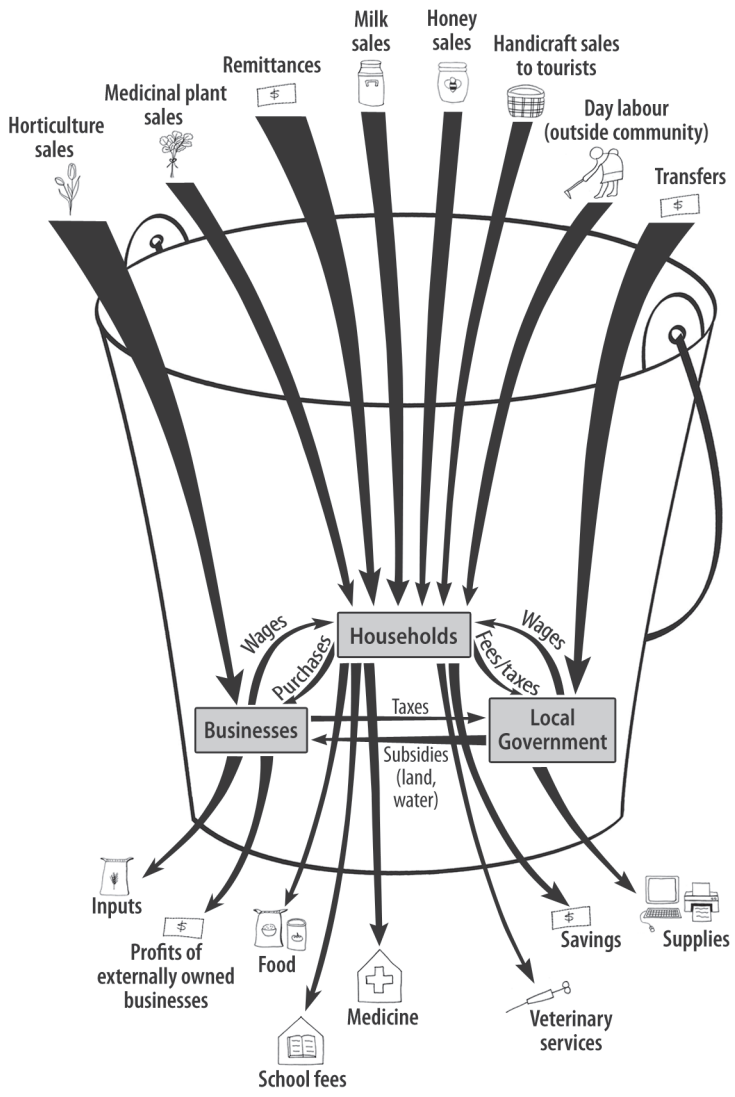


**Figure 4: Typical inflows and outflows**

a grain mill, a few petty shops, and a large flower farm owned by foreigners. By asking the right questions, a facilitator can help the community gain a sense of the importance of local businesses in terms of the income they provide to local households in the form of wages or profits, and the degree to which people purchase goods and services locally versus outside the community.

Community members can also further understand their relationship with local government in terms of what they pay in the way of taxes and fees versus what they get in the way of employment or services, and the relationship between local government and businesses in the community. For example, the local government may be providing tax breaks and access to public land and water for a local flower farm. The degree to which the flower farm is, in turn, employing local residents and purchasing goods and services from households or local businesses may well justify this subsidy. If it does not, community members may want to press the flower farm for increased local hiring or purchasing.

There is a number of other tips to maximize the usefulness of the leaky bucket exercise. First, it is helpful to use the thickness of the arrows to represent the relative magnitude of the flows of money. This allows community members to see which flows are the most important. Second, it is important to allow the community members to do the actual drawing themselves. It is usually only by struggling to create their own leaky bucket diagram that people become engaged in the process.

Third, be sure to distinguish between outflows and leakages. ***Outflows*** are necessary and natural. Community economies exist within regional economies, which in turn exist within national economies, which themselves exist within the global economy. Trade between communities, regions, and countries has many benefits. If communities tried to eliminate all spending outside their borders, they would soon see demand for the products they intend to sell to other communities drying up. ***Leakages***, on the other hand, are monies that are flowing out of the local economy for one of the following three reasons:

1. to purchase items that could be produced locally at equal or better prices or quality;
2. to purchase items that have little or no productive use like alcohol or tobacco; or
3. to sell unprocessed raw materials when both the know-how and potential markets exist for higher value-added products or services within the community.

Some flows, like spending on children's education or health services outside the community, are often not considered as leakages, but rather as investments. That said, if there is enough demand, there may be opportunities to build a school or health clinic in the community. There are many examples of communities that have done this and then lobbied governments to provide teachers or health workers.

## *Simple Leaky Buckets*

It is important to decide at the outset how simple or how complicated this exercise should be. If there is little time, facilitators may choose to ignore the economic exchanges between actors inside the community. Alternatively, there may be situations where it helps to include the key economic actors within the community economy, and also to quantify the main flows of money into and out of the community. An example of how to do this will be provided later.

## Example of a Simple Leaky Bucket: Ilu Aga, Ethiopia

Ilu Aga is located in Ejere District, West Shoa Administrative Zone in the Oromia Region of Ethiopia. The community resides in what is now called the Addis Ababa "milk shed," an area within a two-hour drive of the capital city, which supplies the capital with dairy products. Ilu Aga has just over 600 households, most of which are engaged in the growing of staple food crops such as wheat, barley, and beans. Most community members also generate revenue from the sale of livestock, dairy products, fruits, vegetables, construction poles, and petty trade. A growing number of landless youth have taken up off-farm income-generating activities, either migrating to the capital or getting jobs at foreign-owned flower farms whose numbers in the area have been increasing owing to encouragement from the government.

Over the past 15 years, a number of negative and positive factors have affected the local economy. The community has experienced excessive cutting of exotic trees, which has cumulatively resulted in a high degree of deforestation and topsoil erosion. Indigenous trees and the remaining exotic trees are now found in sparse patches around religious centres and individual homesteads. A relatively high density of cattle has resulted in overgrazing, which has led to further topsoil erosion. Yet this community has a long history of working together to solve problems and to take advantage of opportunities. Accordingly, clan-based labour-sharing arrangements, burial societies, and rotating savings and credit schemes have made it possible for more modern expressions of cooperation to take root and thrive. Examples include a cereal bank, a tree nursery, and a multipurpose cooperative.

Fifty members of the Ilu Aga Cereal Bank Association took part in a leaky bucket exercise in the summer of 2003. The exercise took place after the community had undertaken an inventory of its various assets, including individual skills, local associations, physical infrastructure, and natural resources. The process was facilitated by a field staff member of an Ethiopian NGO called Hundee and a representative of Oxfam Canada. The Ilu Aga leaky bucket was relatively easy to construct as the community decided to focus only on inflows and outflows and not on the flows of money among economic actors within the community. They also decided not to quantify the flows precisely, but rather to estimate them, using the thickness of the arrows to indicate the relative magnitude of each flow.

When the bucket was completed (see Figure 5) and everyone agreed that the main inflows and outflows were correctly drawn, community members discussed what the bucket told them about their local economy. It was clear that the community's income flows were almost entirely dependent on the sale of agricultural and forestry products. No one was surprised that the main sources of income came from the sale of livestock, cereals, fruits and vegetables, and construction poles.

What did surprise people was the prominence of certain outflows. For example, the purchase of chemical fertilizers stood out as by far the largest expenditure. This prompted a discussion in which farmers talked of being trapped in a vicious cycle where the price of fertilizers was rising more quickly than the prices they were fetching for their crops. The relative size of the arrows also showed that a considerable amount was spent on alcohol. This generated a lot of discussion and triggered a process in which a number of people went back to their homes and carried out the leaky bucket exercise with other members of their households. This, in turn, led to a number of household-level decisions to reduce spending on alcohol and social festivities in order to channel the savings into other—"productive"—activities that would increase inflows.

Furthermore, a number of important initiatives were proposed at both the household and community levels, which sought to increase inflows, decrease outflows, and add value to what the community was producing and selling. One of these initiatives was a decision to divert a stream, irrigate communal land, and start growing potatoes—a new cash crop in the area. Today, the group of farmers involved in implementing this program has grown to 90 individuals. They have put 45 hectares of communal land under potato cultivation and operate as a formally registered co-operative with their own potato grading and storage shed. Aside from that, they have built a dry-weather access road to the land they are cultivating and are about to begin construction of a new and improved micro-dam.

This group attributes their decision to irrigate communal land for cash crop production to an Asset-Based Community Development (ABCD) process conducted by Hundee. The process

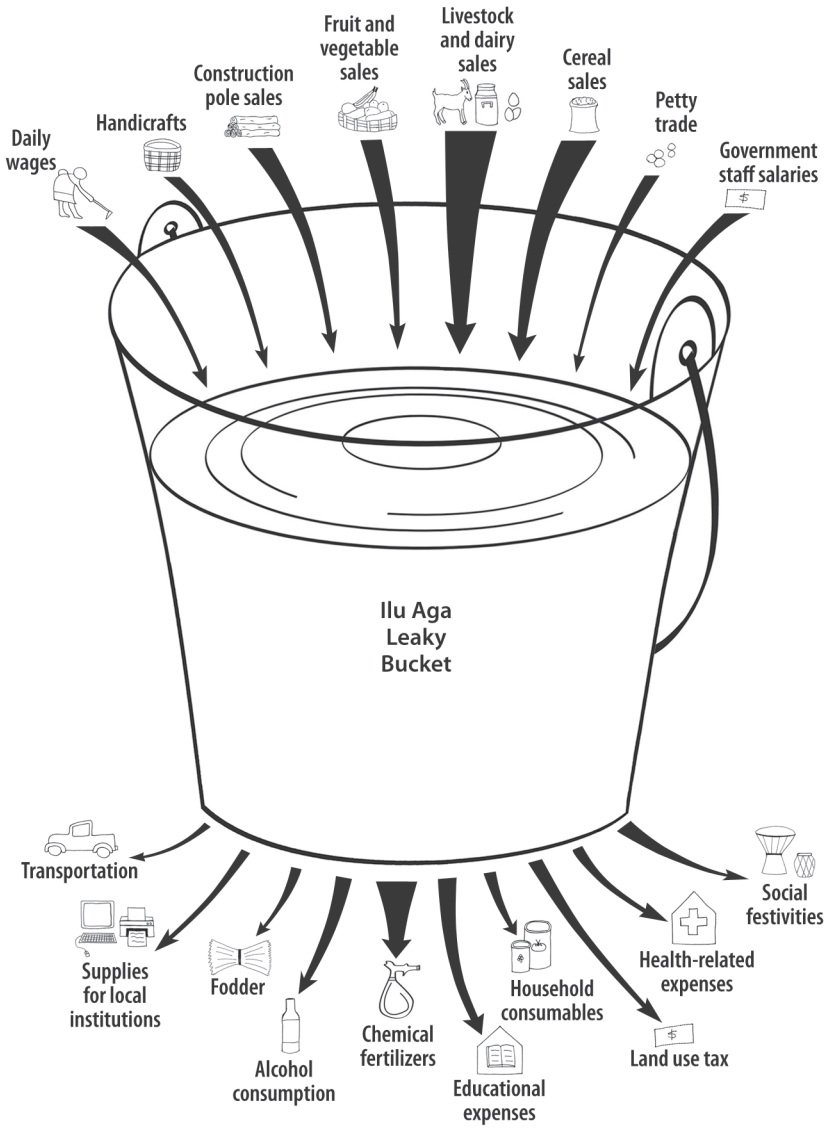


**Figure 5: Simple leaky bucket (Ilu Aga, Ethiopia, 2003)**

began with community members identifying past successes when local people had improved their situation without direction or help from outsiders. These past successes included diverting streams for irrigation and managing conflicts over water usage. A leaky bucket exercise was then conducted, which prompted a number of farmers to take a lesson from the past and use their river diversion skills again to irrigate pastureland for cash crop production. They have since diversified further into producing maize, barley, carrots, red beets, garlic, and onions. To decrease outflows, many households have taken efforts to tackle the high cost of commercial fertilizers by using pit-composting and reducing their expenditures on coffee and alcohol. As one community member recently observed:

> Since [participating in the leaky bucket exercise] I started animal fattening, taking care of existing assets, reducing fertilizer costs, and preparing my own compost. In consultation with my wife, I started vegetable gardening for home consumption thereby reducing expenditures.

Households have tended to channel their newly made savings into both food production and cash crops, activities which further increase both savings and income.

## *Quantifying Economic Flows*

It is possible to carry out a leaky bucket exercise in such a way that people can quantify the flows of money coming into and leaving the community more rigorously. This takes a skilled facilitator, but the benefits are often worth it. Quantifying the flows can lead to an "Aha!" moment when people realize just how much they are spending on items like alcohol or social festivities, or on products or services purchased from outside the community.

In order to quantify the money flows, it is important to focus on the household sector because everyone involved is representative of a household. While people may be reluctant to provide precise information on the income and expenditures for their individual households, they usually feel comfortable identifying average household income and expenditures in a group setting. It is important to pay attention to seasonality or other reasons for varying flows at different times of the year, or from year to year. If there are representatives of local government or larger businesses within easy reach, they can roughly quantify the "government" and "business" boxes in the bucket. In some contexts, however, local elites such as government officials or members of the business community may dominate the discussion, and it is best to perform a leaky bucket exercise without them present.

It keeps things simple if the facilitator picks one of the larger flows coming into the household sector from the outside—for example, the sale of construction poles—and asks: "How much does an average household earn from the sale of wood poles each month/season/year?" making sure the unit of time used is consistent. Then the facilitator can ask: "How many households sell wood poles?" By multiplying the number of households by the average sales, it is possible to estimate roughly the amount of money coming into the household sector from the sale of wood poles outside the community for a given unit of time.

There are some limitations to using this more rigorous process. First, some facilitators are simply not comfortable with doing these kinds of calculations in a group setting. Second, this process usually demands more time of both the facilitator and community members, which may

not be practical. Finally, the data produced are based on estimates of average household income and expenditures, and as such, are not precise. This is usually only problematic if the leaky bucket is being used by external agencies as an evaluation tool to accurately quantify changes in incomes or expenditures resulting from the implementation of a particular project or program. The issue of precision and using the leaky bucket for evaluation purposes will be discussed in more detail later in the paper.

## Quantifying Economic Flows in Mathopestat, South Africa

Mathopestat is a village of approximately one thousand people located near the city of Rustenburg within the mining belt of South Africa. Many of the men of Mathopestat work outside of their home community in the mines or they have left it altogether and moved to one of South Africa's large cities. Over 60% of those who remain in Mathopestat are mothers, children and adolescents, grandparents, and unemployed men and women. As is typical of South Africa's rural areas, many households in Mathopestat depend almost entirely on social grants from the state as their main source of livelihood, although it is not uncommon for the local residents to supplement this income with small-scale, informal cash-generating activities such as raising and selling livestock. There are very few formal sector businesses in Mathopestat; most village residents prefer to do their shopping in nearby Rustenburg.

In November 2009, Sebastian Mathews, then board chair of the Greater Rustenburg Community Foundation (GRCF), facilitated a leaky bucket exercise in this community. He chose to hold the session during the day to attract the groups targeted by the GRCF: unemployed youth and grandmothers. More than 80 community members attended. For this exercise, Mathews focused exclusively on the flows of money into and out of the household sector. He asked the participants to indicate the main sources of income and expenditures and to estimate how much an average household earned or spent on certain items in a month. He then multiplied this estimate by 12 (to obtain the average annual income or expenditure) and then by the number of households in the community.

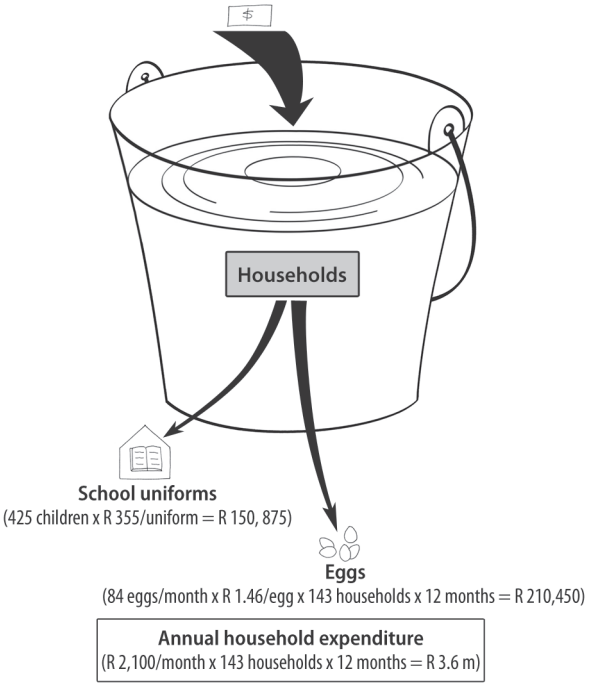


**Figure 6: Quantified economic flows (Mathopestat, South Africa, 2009)**

Within a few minutes, the grandmothers (or "go-gos" as they are known in South Africa) were pulling out their cell phones and doing the calculations themselves. It turned out that the estimated total household income in the community from grants alone was about 3.7 million Rand ($475,000 USD), with another R 1 million coming from the sale of livestock and wages earned. Of this income, some R 3.6 million was leaving the community, most of which was spent in Rustenburg. For example, households

spent R 210,450 on eggs in city supermarkets, R 150,875 on school uniforms, and a similar amount on alcohol, even though most village residents knew how to raise chickens, sew, and brew their own beer.[1]

This process created an "Aha!" moment when community members started thinking about how to capture money leaking from their community and invest it into income-generating activities. The week after the leaky bucket exercise, a group of women started pooling their savings to purchase dairy goats to produce milk and cheese for sale in Rustenburg. The leaky bucket helped them assess the potential market size for their business. By estimating how much households spent on similar products outside the community, these micro-entrepreneurs were able to gauge how much money local people might be willing to spend on their products.

## The Leaky Bucket as a Monitoring and Evaluation Tool

In addition to the uses discussed above, the leaky bucket tool can also be employed by community members and development organizations alike to track changes in the local economy over time. Even though it yields only rough and largely subjective estimates, they can nonetheless be very useful for improving understanding of, and building consensus about, important developments. For example, the community of Ilu Aga repeated the leaky bucket exercise in November 2008, five years after the initial use of the tool (see Figure 7). In estimating how thick to draw the various arrows, they were able to identify a number of changes that had occurred as a result of the action plan they had developed in 2003. Bearing in mind that the values presented below were agreed upon by community members and should be taken as indicative only, the most notable of these changes included:

- the emergence of a new income stream—growing and selling potatoes;
- a 30% reduction in spending on chemical fertilizers due to increased use of pit compost, without any significant reduction in production;
- a 90% reduction in household consumption of food purchased from outside the community as a result of increased local food production;
- a 60% and 80% reduction in spending on alcohol and social festivities, respectively;
- an overall increase in household savings, which led to a 50% increase in spending on children's education. While the latter meant more money flowing out of the community, this was perceived as an investment rather than a leakage.

Significantly, one of the main reasons given by community members for how they managed to change their expenditure patterns, realize savings, and then channel these savings into productive activities was that they put the leaky bucket concept to use as a household budgeting and planning tool. Likewise, in her analysis of the various participatory techniques employed for evaluating the ABCD process in Ilu Aga, Peters (in press) observed that "the leaky bucket seemed to be as useful as a household budgeting tool as it was for community economic planning."

[1] For a more detailed look at this exercise, see Appendix.

## Limitations of the Leaky Bucket Tool

Whether the leaky bucket is used as an exercise to roughly estimate or to more systematically quantify the magnitude of various money flows into and out of a local economy, it is not a rigorous econometric tool. In fact, most economists would not even recognize a "community" as a valid unit of analysis. Similarly, as an evaluation tool, the leaky bucket could be misleading because the data it yields are based on estimates of average household income and expenditure. Furthermore, to track changes accurately over time, the same people would have to take part in the exercise and be asked the same questions in the same manner. Even if these conditions were met, there would still be serious issues about attributing changes in economic flows to particular interventions. For example, Peters (in press) offered the following advice after using the leaky bucket exercise to determine if a particular project resulted in livelihood diversification or reduced expenditures:

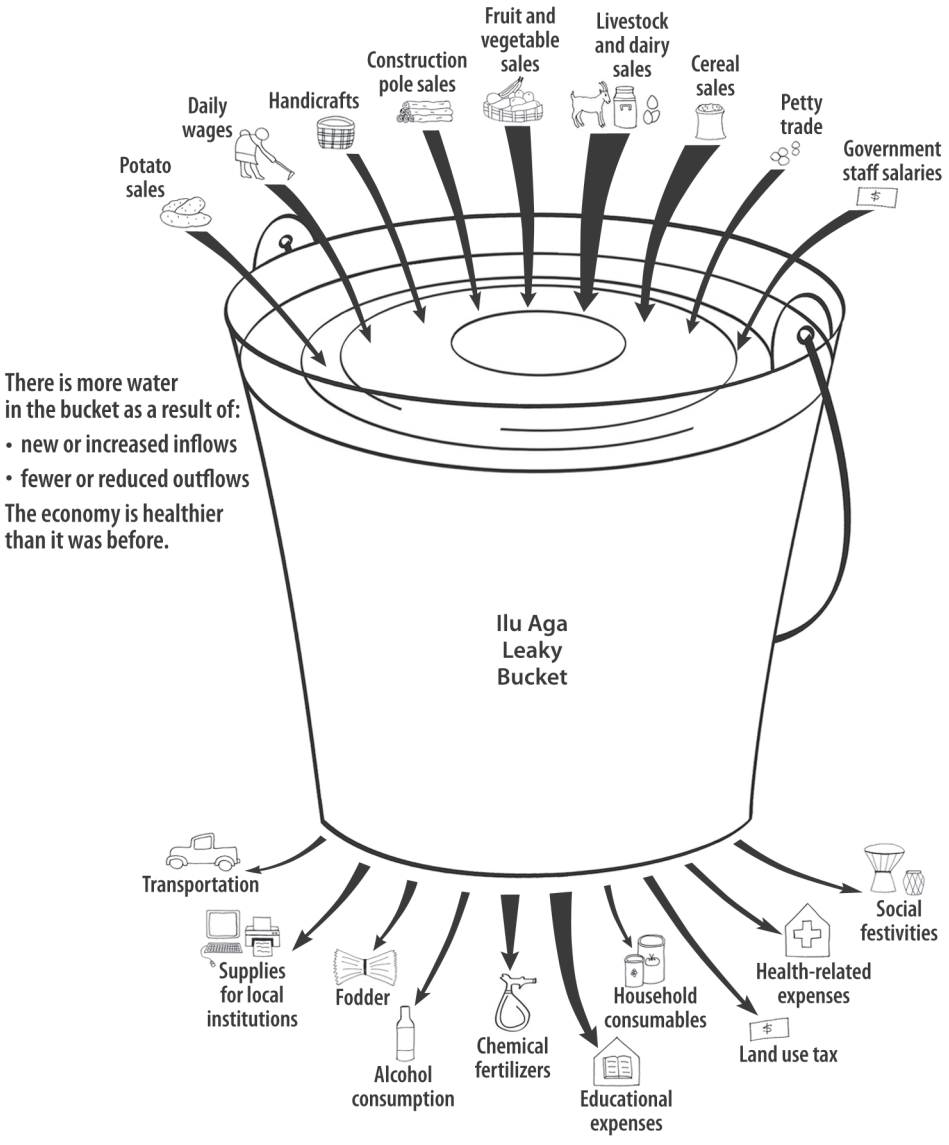


**Figure 7: Leaky bucket as a monitoring and evaluation tool (Ilu Aga, Ethiopia, 2008)**

In order to capture attribution more clearly, facilitators must be sure to probe for economic changes that may have nothing to do with the project but have impacted the community or household asset base nonetheless. For example, a rise in the price of coffee could increase incomes and artificially inflate the impact of project activities, or alternatively, a lowered price could be mitigated by project activities.

In order to understand whether a change in economic flows could be attributed to the implementation of their particular project, Oxfam Canada staff carried out the leaky bucket exercise in Ethiopia and asked participants if their household or community income as a whole had increased, decreased, or stayed the same since the project started. They also asked participants to explain why their income and expenditure had changed or stayed the same. The responses were then recorded by facilitators, as shown in the example presented in Figure 8.

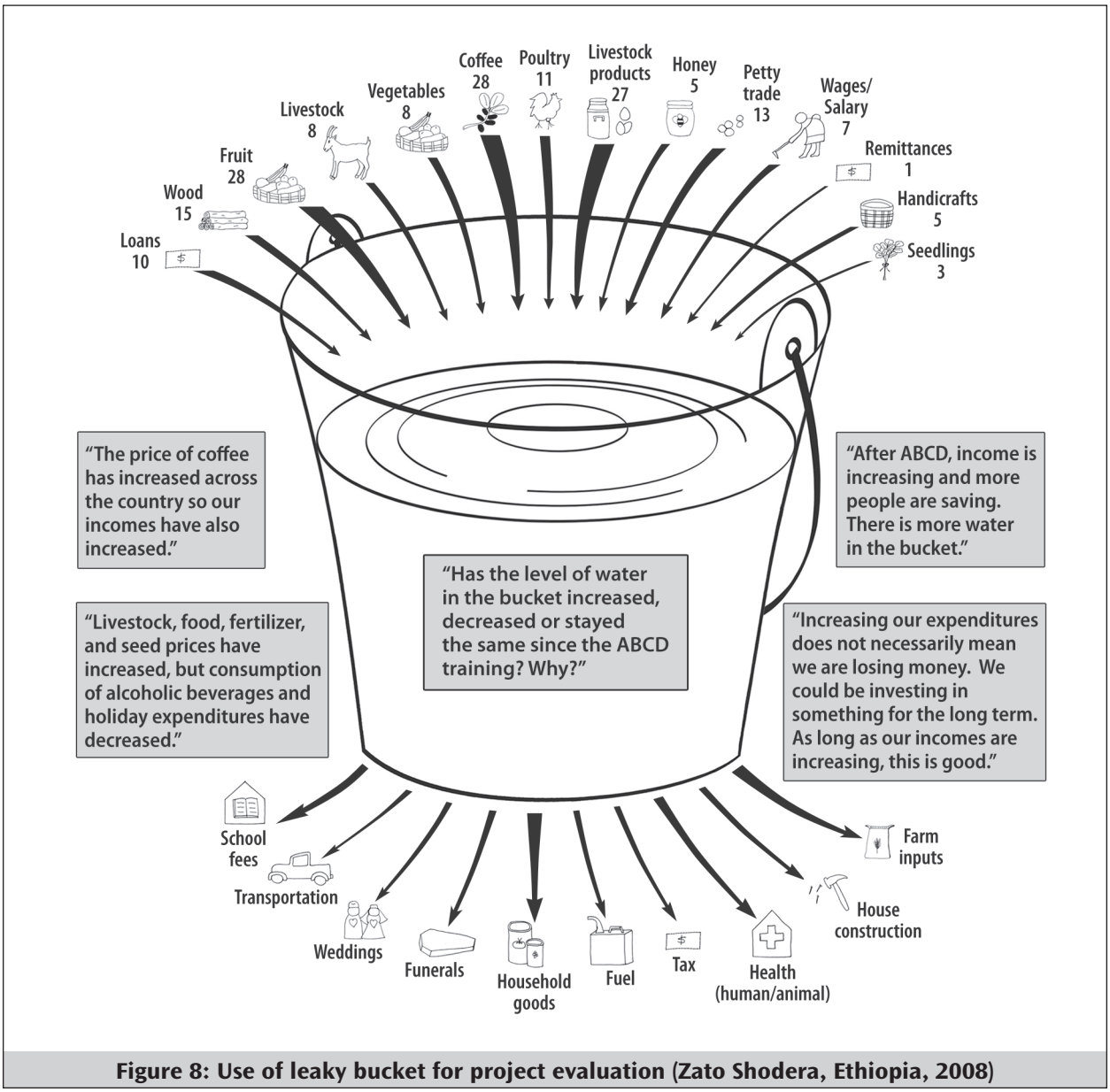


**Figure 8: Use of leaky bucket for project evaluation (Zato Shodera, Ethiopia, 2008)**

Although these stories do not provide absolute confidence in attribution, they do give facilitators a solid sense of what can and cannot be reasonably connected to certain interventions. The questions about attribution and accuracy seem to be of more concern to NGOs, governments, or donor agencies than to community members themselves, who appear to understand such concepts as accuracy or validity implicitly.

Rather than viewing the leaky bucket as a precision tool for measurement purposes, it should be understood as a popular education tool that helps community members grasp the structure and dynamics of their local economies, track changes in economic flows over time, and identify opportunities for increasing incomes or decreasing expenditures.

With regard to these opportunities, however, one should note another limitation of the leaky bucket: facilitators must bear in mind that this tool does not provide community members with a realistic analysis of whether a particular opportunity is actually worth exploring further. For example, it cannot answer the question of whether there is a market for dairy products or potatoes beyond the community, if this is the avenue its members consider pursuing. Nor can it answer whether the government will provide a teacher or doctor if the community decides to build a school or clinic. For this reason, the Livelihoods and Markets team at the Coady Institute is developing a simplified value chain analysis tool to help community members better assess the feasibility of the opportunities identified.

## Conclusion

The leaky bucket is a relatively simple popular education tool that has been used in many countries by community groups as well as government and non-government agencies for a variety of purposes: to help communities and households identify or scale up income-generating activities; to reduce expenditures on unproductive activities; to increase savings and redirect them into more profitable activities; to monitor and track changes in income streams, expenditures, and livelihood diversification; and to instigate discussions on whether (and how) financial assets have increased or decreased as a result of a particular intervention. The tool can be simple or more complex, depending on how much rigour is required and on the abilities and interests of those who are using it. It has been employed in different ways and continues to evolve. The ongoing development of the leaky bucket tool is a testament to its utility in demystifying technical terms and concepts by using language and diagrams that everyone can understand.

## Acknowledgments

I would like to thank Mengistu Gonsamo, Samuel Molla, Brianne Peters, and Sebastian Mathews for providing descriptions of the leaky bucket exercises they facilitated in Ethiopia and South Africa. Lola Corkum contributed artwork for the leaky bucket diagrams. Catherine Irving, Wendy Kraglund-Gauthier, Alison Mathie, Emily Nunn, and Brianne Peters read earlier drafts of the paper and provided helpful suggestions.

## References

Cunningham, G. (1990). The local economy and micro-enterprise sector of a Native community: A case study of Wikwemikong (unceded) Indian Reserve #26 (Unpublished master's thesis). University of Guelph, Guelph, Canada.

*Fairbairn, B., Bold, J., Fulton, M., Ketilson, L.H., & Ish, D. (1991). Co-operatives and community development: Economics in social perspective. Saskatoon, Canada: Centre for the Study of Co-operatives.*

Hustedde, R., Shaffer, R., & Pulver, G. (1984). *Community economic analysis: A how-to manual.* Madison, WI: North Central Regional Center for Rural Development.

Peters, B. (in press). *Capturing unpredictable and intangible change: Evaluating an asset-based community development (ABCD) approach in Ethiopia (*Coady International Institute Occasional Paper Series, No. 10). Antigonish, Canada.

## Appendix: Details of Leaky Bucket Exercise (Mathopestat, South Africa, November 2009)

***by Sebastian Mathews***

The exercise involved about 80 community members—mostly older persons, women, youth, and unemployed men—divided into five roughly equal groups. At the outset, each group was asked to estimate the average household size in Mathopestat. They all agreed that the average household consisted of seven persons, typically including two parents, one grandparent, one adopted child (due to a high percentage of AIDS orphans), and two biological children under the age of 15. By dividing the total population of the village (1,000) by the average household size, we estimated that there were 143 households in Mathopestat.

### Expenditure Example: Eggs

We used this simple example to familiarize the community with calculating and aggregating expenditure and income. We noticed there weren't too many chickens around the village and guessed that its residents were likely buying their eggs from town. They confirmed this when we asked. So we ran a step-by-step process to show them how to logically work out expenditure for something, in this case eggs:

| | | |
|---|---|---|
| Eggs consumed per person per week | 3 | |
| Eggs consumed per person per month | 12 | (3 x 4) |
| Eggs consumed per household per month | 84 | (12 x 7) |
| Eggs consumed per household per annum | 1,008 | (84 x 12) |
| Eggs consumed in Mathopestat per annum | 144,144 | (1,008 x 143) |
| Cost of one egg | R 1.46 | |
| Total expenditure on eggs | R 210,450 | (144,144 x R 1.46) |

These estimates evoked the "Aha!" moment, when community members realized that they were spending this small fortune on eggs from town, even though they could easily produce those eggs themselves.

### Assessing Income and Expenditure Streams

- We started by calculating the grant income for the average Mathopestat household:

| Grant type | Value | Avg. number per household | Amount per household | |
|---|---|---|---|---|
| Older person's grant | R 1,010 | 1 | R 1,010 | |
| Foster child grant | R 680 | 1 | R 680 | |
| Child support grant | R 240 | 2 | R 480 | |
| Monthly grant income | | | R 2,170 | |
| Annual grant income | | | R 26,040 | (2,170 x 12) |

- We then calculated the total annual community grant income: R 26,040 x 143 households = R 3,723,720.
- Next, we asked community members to estimate the average monthly household expenditures by type of product/service (e. g., food, clothing, cellular airtime, debt repayments, etc.). Remarkably, all five groups came up with roughly the same aggregate average spending (R 2,100 per household per month), which likely indicates that community residents share a largely homogeneous lifestyle. Based on this estimate, we gauged the total annual community expenditure: R 2,100 x 143 x 12 = R 3,603,600.
- The above steps enabled us to evaluate what amount of money is potentially available annually for undertaking economic development activities in Mathopestat: R 3,723,720 – R 3,603,600 = R 120,120. This is the "magic parameter" we want to increase so that community members have enough funds on hand to form enterprises aimed to produce new goods and services as well as to add value to existing productive activities within the community, thereby increasing its overall wealth.

The Occasional Paper Series is designed to provide discussion and analysis of new ideas related to the Coady International Institute's work in Development Leadership. Most occasional papers are written by the Coady Institute's teaching faculty, associates, and graduates; contributions from other authors are also welcome.

COADY
INTERNATIONAL INSTITUTE
ST. FRANCIS XAVIER UNIVERSITY
Igniting Leadership

The Coady International Institute
St. Francis Xavier University
PO Box 5000
Antigonish, NS
B2G 2W5 Canada

www.coady.stfx.ca