

## **Can social capital and a focus on building collection action help coffee growers overcome livelihood challenges in in Timor-Leste?**

Lisa Walker

The small nation of Timor-Leste has a natural advantage in producing good quality, organic Arabica coffee owing to its climate, altitude and historically low use of inputs including fertilizer (World Bank 2011; MAF 2009). Despite these advantages and similar to other agricultural commodities in Timor-Leste, the coffee industry must also contend with poor roads, missing infrastructure and limited access to essential services. In addition, the Ministry of Agriculture and Fisheries (MAF) estimates that over 55 per cent of the area planted with coffee trees in the country is now taken up with old and relatively unproductive trees (MAF 2009). Notwithstanding these challenges, the Government has identified the industry, which provides income to over one third of the population (NSD 2011) and accounted for 80% of the value of non-oil exports in 2010, as having a key role to play in reducing rural poverty (GOTL 2011).

In addition to productivity constraints, Timorese coffee growers must also engage with supply chains for international coffee that have marginalised and disempowered small scale coffee producers. While there are a number of well-studied initiatives, such as Fairtrade coffee, that attempt to change the damaging effects market trends are having on small-hold growers (Bacon 2005; Daviron and Ponte 2005; Ponte 2002), it is increasingly being found that price premiums have not increased in line with coffee prices<sup>1</sup> and that where a premium does exist it is often insufficient to have an impact on overall household livelihoods (Méndez et al. 2010; Bacon 2010; Valkila 2009; Jena et al. 2012).

One aspect that is receiving more coverage in the literature is how participation in cooperatives (including Fairtrade or organic) helps improve household livelihoods. Jena et al. (2012) isolate the benefits that arise as a result of participation in cooperatives and compare these to the benefits of being part of a certification scheme. They conclude that certification does not automatically provide better outcomes for coffee growers and that it is the structure and capabilities of the cooperative itself that are most relevant to overall grower livelihoods. Viewed more broadly, cooperatives and collective action, with their focus on providing services to members, also provide a number of benefits to coffee growers including improving economies of scale (Markelova et al. 2009), increasing market coordination and facilitating access to higher value supply chains, such as Fairtrade and organic certified coffee (Poulton et al. 2010).

This research seeks to build on these findings and contribute to the small body of literature on the Timor-Leste coffee industry. It aims to understand the key factors influencing the livelihoods of coffee growers with a view to identifying how actors can best work with communities to improve overall livelihoods. The paper is separated into two sections. The first section of the paper will introduce the sustainable livelihoods approach and explore the conceptualisation of social capital within this framework. The second section will outline the research methods and explain the key findings.

### **Sustainable livelihoods and social capital**

Given the complexity of the problem facing growers in Timor-Leste, with interlinked challenges of low productivity, poor infrastructure, persistent poverty, and overall supply chain disadvantages, there is a need to draw on a cross-disciplinary, integrated analysis that can understand how each of these factors impacts the overall wellbeing of individuals, households and broader communities. The sustainable livelihoods approach, as outlined in Scoones (1998) and DFID (1999), provides a useful set of tools with which to analyse the situation. The approach has made a significant contribution in shifting the focus of development

---

<sup>1</sup> In 2007-08 the FLO approved a small, nominal increase in the Fair Trade minimum price, this was the first major change in the Fair Trade price since the scheme originated in 1988 (Bacon 2010)

literature and practice from macro level concerns to micro, household level factors, including the strategies available to different households and how various resources are applied to make a livelihood, see for example Barrett et al. (2001), and Ellis (2000).

Notwithstanding its widespread use, there are a number of criticisms that are often levelled at the sustainable livelihoods approach. Most relevant to this paper is the view that while the sustainable livelihoods approach makes references to social assets (henceforth referred to as social capital) and indeed recognises social capital as having a key livelihood impact, ideas of reciprocity, interdependence and cooperation are often only included at the margins (King et al. 2013; De Haan and Zoomers 2005). A scan of literature on rural sustainable livelihoods finds some merit in this critique and in particular highlights the lack of consistency in the empirical treatment of social capital (Ellis and Bahiigwa 2003; Cramb et al. 2004). This criticism holds particular relevance for the analysis of coffee growing in Timor-Leste, given that social capital has been identified as playing a key role in facilitating collective action and cooperative behaviours in communities (Krishna 2004; Ostrom et al. 1994).

The social capital variables that will be utilised in the next section have been designed giving consideration to this criticism. The first social capital variable relates to the percentage of households that participate in collective coffee production activities. These activities include both formally and informally organised activities such as harvesting, pruning, mulching, or re-planting trees. Consistent with the treatment of participation in labour sharing groups in Krishna (2004), this variable provides an indication of the established patterns of organisation and resource mobilisation in communities. It therefore provides a useful indicator of the *structural* levels of social capital in the community. The second social capital variable provides indications of borrowing that occurs between households. High levels of inter-household borrowings may suggest strong networks of trust and reciprocity amongst rural coffee growing households, effectively capturing the more intangible aspects of social capital and thus providing a good representation of its *cultural* component (Van Deth 2003).

## Research findings

This paper will draw on the results of a survey and follow up semi-structured interviews of coffee growing households in Ermera district. The survey was conducted in two stages, 826 coffee farming households in Ermera were interviewed in the first stage in February 2011 and 777 of these households were available for the second interview in August 2011. Researchers randomly selected a sub-set of 4-6 sucos (villages) within each of the five sub-districts in Ermera District and sampled approximately 20 households within each suco. The survey provided household level data on a range of topics including household assets, income sources, education and coffee production. The information gathered in the survey was then used to inform semi-structured interviews with growers and other key informants from the Timor-Leste coffee industry.

**Table 1** – Asset endowments by income group

Variable	statistic	Income group 1 n=250	Income Group 2 n=250	Income Group 3 n=249
<i>Physical capital</i>				
House with electricity	% of households with	21.2	27.2	34.9
House made from concrete or brick	% of households with	20.8	22.8	38.6
<i>Human capital</i>				
Household size	mean	7.2	6.9	6
Education	average years	5.8	4.6	4.8
Meals per day	mean	1.6	2	2
<i>Financial capital</i>				
Household per capita income	mean (\$US/cap)	17.6	70.9	284.5

Months with no income	mean	2.3	2.2	2.1
Coffee income	% of total household income	87.0	71.4	49.6
Labour income	% of total household income	4.7	10.3	32.7
Animal income	% of total household income	4.1	13.7	13.8
Crop income	% of total household income	3.8	3.3	1.9
Cattle equivalent units	mean	0.9	1.1	1.7
<i>Natural capital</i>				
Household coffee yield <sup>1</sup>	(kg parchment equivalent/hectare)	47.6	133.1	197.3
Household land (excluding coffee)	mean (acres)	2.8	3.2	3.2
Coffee land	mean (acres)	2.6	3.0	3.5
<i>Social capital</i>				
Borrowed money from friends/family	% of households	56.8	48.0	49.0
Participate in collective coffee activities	% of households	4.8	12.0	9.6

<sup>1</sup> Coffee in Timor-Leste is typically sold as either red cherry or parchment, where 5kgs of red cherry equal 1kg of parchment. To calculate the yield, the quantity of red cherry has been converted to its equivalent parchment weight and added to the total amount of parchment sold

Table 1 separates the results of the survey of coffee growing households in Ermera into the five asset categories that form the core of the sustainable livelihoods approach as detailed in Scoones (1998) and DFID (1999). Consistent with the treatment in Ellis and Bahiigwa (2003, p. 1003) the asset holdings of households are evenly distributed across three income groups. The first group represents households with per capita income of less than \$38.57 per year, the second group contains households with incomes from \$38.58-\$118.75 per year and the third group represents households with per capita income greater than \$118.75 per year. In the discussion to follow, it is important to be cognisant of the high levels of poverty in the district and as such, while households in the third income category may have relatively high average per capita income (\$284.5) compared to this first group (\$17.6), all of the households need to be recognised as facing significant income challenges. Furthermore, a cross-check of the reported household incomes against coffee quantities and average parchment prices indicates that households in the third income category may have over-estimated their household earnings.

The analysis shows that coffee income makes up 87 per cent of total income for households in the first group and that this decreases to less than 50 per cent of total household income for those in the third group. Large differences are evident in the importance of labour income for overall household income with labour income making up over one third of total household income in the last income group compared to less than five per cent in the first group. This is a significant difference and as will be discussed below, the reliance on coffee income has implications for overall yield levels and the ability of households to respond to stresses and shocks.

The survey data also reveals large differences in average yield levels between the three income groups. Households in the second and third income group produce 133.1kgs and 197.3kgs of coffee respectively per hectare. In comparison, those in the low income group produce 47.6kgs per hectare. While the large discrepancies in average yield between the poor and less poor households is a significant concern, the yields for all groups are also considerably low by international standards. In this regard, the World Bank (2011) estimated that Timor-Leste's total coffee yield (at 0.22Mt/ha) was approximately 20 per cent of

those achieved in comparable South-East Asian Nations.<sup>2</sup> The World Bank (2011), MAF (2009) and Oxfam (2004) have all highlighted low yields, resulting from old trees<sup>3</sup> and poor maintenance practices as placing significant constraints on household livelihoods and on the further development of the industry in Timor-Leste.

Field research undertaken for this study highlighted that in many coffee growing areas in Ermera, the only way to plant new trees coffee trees is to cut down older ones. However, with over a third of households surveyed receiving more than 80 per cent of their total household income from coffee it seems reasonable to assume that growers may be reluctant to heavily prune or replace trees because the associated reduction in income for up to three years while the trees mature would have severe short term consequences for income levels and overall livelihoods. Instead of replacing trees, growers have taken to planting new trees in vacant space amongst existing trees, potentially contributing to over-crowding problems and further impacting yields.

Recognising the challenges facing the industry, MAF and a number of the commercial coffee producers have introduced training programs to help growers improve yields and the overall quality of coffee produced. However, the reach of these programs is limited, with only 14 per cent of surveyed households receiving formal training in the previous four years. In addition, despite the significant difference in yield and the importance of coffee income to households in group one, those in the third income category are most likely to receive training.

The social capital variables provide contrasting results for the survey population. Fewer than nine per cent of households participate in labour sharing groups for coffee production. Interviews with growers did indicate that this result may fluctuate year to year depending on expected harvests, with participation in labour sharing groups more likely when higher returns are expected. As one grower remarked:

...in a good year, when there are plenty of cherries, we ask others to come help with harvesting our coffee trees, we also go and help others harvest their coffee (personal communication, 17 November, 2012).

Table 1 shows that households in the lowest income group are the least likely to participate in any labour sharing activities. These findings are consistent with low levels of collective action across the entire coffee industry. The market is dominated by three commercial firms, Timor Global, Timor Corp and the Cooperative Café Timor (CCT).<sup>4</sup> While a handful of NGOs promote cooperative based coffee production, their market share is very small. Data from the MAF indicated that in 2008, they accounted for approximately 1 per cent of total coffee exports (MAF 2009). By way of comparison, the Ethiopian coffee industry has an extensive network of primary cooperatives. These cooperatives, which operate under cooperative unions, provide access to equipment, inputs, technical support and aim to counterbalance the market strength of private organisations (Ruben and Heras 2012).

The second measure of social capital finds that approximately half the households borrowed money from family or friends in either one or more of the survey periods. In contrast, only 4 per cent of households borrowed money from formal lenders (e.g. banks) and 12.1 per cent borrowed from local money lenders. As the male head of one household explained:

---

<sup>2</sup> The World Bank compares yields for Indonesia (0.51Mt/ha), Lao PDR (0.65Mt/ha), Cambodia (0.82Mt/ha) and Thailand (0.87Mt/ha).

<sup>3</sup> It is generally accepted that coffee trees are productive up to 30 years old, in contrast, it is estimated that the average age of coffee plants in Timor-Leste is between 50-80 years old (Parliament of the Commonwealth of Australia 2000; Oxfam 2004)

<sup>4</sup> For the purposes of this paper, CCT is viewed as a commercial coffee entity, rather than a cooperative organisation. CCT was the only certified Fairtrade coffee producer in the country until 2011 when the organisation voluntarily withdrew itself from the international Fairtrade system to focus on the high value organic market. Despite its cooperative background, research indicated that CCT regularly purchases cherry from growers that are not cooperative members. Furthermore, key industry informants also voiced concern with the level of grower representation/organisation and the organisation's overall commitment to underlying cooperative principles.

...for many years we have been looking for other institutions to borrow money from....other income is hard to get, we borrow money when food is low, mainly from other households. Then we have to repay at harvest time” (personal communication, 16 November, 2012).

Overall, the high rates of borrowing between friends and family demonstrates that in the presence of missing credit markets and/or high barriers to entry, households are drawing on the strong relationships and cultural connections in their communities to manage income fluctuations.

### **Social capital in practice**

When reviewing the survey results, it became clear that a number of coffee growers were participating in training and collective activities being facilitated by Alter Trade Timor (ATT) a local NGO that began operating in Ermera in 2007.<sup>5</sup> ATT’s activities focus on a number of key areas including improving coffee production through training and access to processing equipment, and income diversification and management. Most relevant to this research project, the organisation places a strong emphasis on building social capital and facilitating collective action through suco level farmer committees. In this regard it provides a useful example of how to operationalise elements of social capital within a broader sustainable livelihoods approach to development.

The organisation has established 23 farmer committees incorporating 430 growers in Ermera. The activities of each committee are managed by a local coffee grower that is formally employed by ATT and receives training and ongoing support. Farmer committees meet formally five times each year and local ATT staff meet with members on a weekly basis. By relying on trusted members of the local community to facilitate key project activities and ensuring these activities are undertaken in close consultation with all committee members, ATT is leveraging the strong networks of trust, highlighted in the preceding analysis, to build networks, formal processes and structural aspects of social capital.

This is a relatively unique model in Timor-Leste where government agencies and NGOs have tended to rely on introducing external experts into rural communities to provide education and training. According to one Dili-based key industry informant, these programs often suffer from significant cultural misunderstandings. For example, superstitions are often cited as key reasons for the reluctance of growers to adopt new practices advocated by extension officers. However, no evidence was found to substantiate this suggestion in the research undertaken for this paper. Rather, it seems likely that growers may be hesitant to adopt new practices because agricultural extension workers often have few pre-established relationships to rural communities and are received with considerable caution by local communities.

One of ATT’s key goals is to improve the quality of village based wet processing of coffee cherries.<sup>6</sup> ATT provide equipment and training to allow growers to process red cherries to parchment and to improve the quality of this parchment. Once the cherry has been processed, ATT pays growers a price for parchment that is equal to the price for red cherry multiplied by five, plus an additional \$0.15 cents to recognise the ‘value-added’ component involved in processing the cherries. In this way, growers that sell to ATT are better off producing parchment. By using the farmer committees to facilitate access to processing equipment, ATT is reducing the overall transaction costs associated with producing parchment, allowing small-holders access to training and equipment that they would otherwise not be able to afford and thus tapping into the structural benefits of social capital. Recognising the income challenges facing growers, ATT is also working with its farmer committees to help diversify household income and improve the

---

<sup>5</sup> The NGO is a certified organic producer under the Japanese Agricultural Standard and is a subsidiary of Alternative Trade Japan (ATJ), an organisation launched in 1987 by a number of consumer cooperatives in Japan to promote trade in organic and ethically produced food (Japanese Consumer Cooperative, 2012).

<sup>6</sup> There are two main methods to process coffee cherries to parchment in Timor-Leste, wet and dry processing. Dry processing involves leaving the red cherry in the sun for approximately 10 days to remove all moisture from the bean. Wet processing involves pulping, fermenting and washing cherries. Five kilograms of cherry produce approximately one kilogram of parchment.

capacity of growers to undertake much needed maintenance and rehabilitation of their coffee plantations.<sup>7</sup> Increasing non-coffee income not only helps to reduce vulnerability to fluctuations in coffee prices and yields but also improves the ability of households to manage the short term decrease in income that arises as new trees mature.

## Conclusions

This paper used the sustainable livelihoods framework to understand the factors that impact the livelihoods of small-scale coffee growing households in Timor-Leste. It acknowledged the small but growing literature that recognises the importance of collective action and cooperatives to the livelihoods of small scale coffee growers. In light of these findings it proposed a more consistent treatment of social capital within the sustainable livelihoods approach to improve its ability to adequately capture the multidimensional ways in which social capital influences livelihoods.

Applying this re-focused framework, the paper analysed the results of qualitative and quantitative data on coffee growing households in the Ermera district. Key issues including low yields and a high dependence on coffee income amongst the poorest members of the community, coupled with significantly low levels of coordinated collective activity, were all identified as presenting considerable challenges that impact the long term sustainability of individual and household livelihoods. While the economic manifestations of social capital were low, cultural indicators of trust and shared values were found to be central to households' livelihood strategies, with households at all income levels drawing on their relationships with family and friends to help meet their basic needs.

The paper also provided a practical example of how one organisation is leveraging the strong bonds between rural households and taking a multifaceted approach to strengthen rural livelihoods. ATT is letting local growers lead training projects while also facilitating income diversification projects that aim to both reduce household reliance on coffee income and provide households with the capacity to prune and replant trees to increase yields. By building effective, local level institutions, ATT is helping growers realise the many tangible benefits offered by collective action and thus provides a useful example for others seeking to improve the livelihoods of growers.

## Bibliography

- Bacon, C. 2005, 'Confronting the coffee crisis: can fair trade, organic, and specialty coffees reduce small-scale farmer vulnerability in northern Nicaragua?', *World Development*, 33 (3): 497-511.
- 2010, 'Who decides what is fair in fair trade? The agri-environmental governance of standards, access, and price', *The journal of peasant studies*, 37 (1): 111-147.
- Barrett, C. B., Reardon, T. & Webb, P. 2001, 'Nonfarm income diversification and household livelihood strategies in rural Africa: concepts, dynamics, and policy implications', *Food policy*, 26 (4): 315-331.
- Cramb, R., Purcell, T. & Ho, T. 2004, 'Participatory assessment of rural livelihoods in the Central Highlands of Vietnam', *Agricultural Systems*, 81 (3): 255-272.
- Daviron, B. & Ponte, S. 2005, *The coffee paradox: Global markets, commodity trade and the elusive promise of development*, Zed Books, London and New York.
- De Haan, L. & Zoomers, A. 2005, 'Exploring the frontier of livelihoods research', *Development and Change*, 36 (1): 27-47.
- DFID 1999, *Sustainable Livelihoods Guidance Sheets: Overview 1.1*. DFID. <http://www.enonline.net/resources/667>, viewed 12 December 2012.
- Ellis, F. 2000, 'The Determinants of Rural Livelihood Diversification in Developing Countries', *Journal of Agricultural Economics*, 51 (2): 289-302.
- Ellis, F. & Bahigwa, G. 2003, 'Livelihoods and Rural Poverty Reduction in Uganda', *World Development*, 31 (6): 997-1013.

---

<sup>7</sup> In one example, ATT encouraged commercial fishing in the village of Eraulo which is situated within close proximity to a large lake that provides a year round source of water.

- GOTL 2011, *Timor-Leste Strategic Development Plan 2011-2030*.  
[http://www.tls.searo.who.int/LinkFiles/Home\\_NATIONAL\\_STRATEGIC\\_DEVELOPMENT\\_PLAN\\_2011-2030.pdf](http://www.tls.searo.who.int/LinkFiles/Home_NATIONAL_STRATEGIC_DEVELOPMENT_PLAN_2011-2030.pdf), viewed 2 August 2012.
- Jena, P. R., Chichaibelu, B. B., Stellmacher, T. & Grote, U. 2012, 'The impact of coffee certification on small-scale producers' livelihoods: a case study from the Jimma Zone, Ethiopia', *Agricultural Economics*.
- King, R., Adler, M. A. & Grieves, M. 2013, 'Cooperatives as Sustainable Livelihood Strategies in Rural Mexico', *Bulletin of Latin American Research*, 32 (2): 163-177.
- Krishna, A. 2004, 'Understanding, measuring and utilizing social capital: clarifying concepts and presenting a field application from India', *Agricultural Systems*, 82 (3): 291-305.
- MAF 2009. Commodity Profile Series: No. 9 Version 1 - Coffee. Dili: Ministry of Agriculture and Fisheries (MAF).
- Markelova, H., Meinzen-Dick, R., Hellin, J. & Dohrn, S. 2009, 'Collective action for smallholder market access', *Food Policy*, 34 (1): 1-7.
- Méndez, V. E., Bacon, C. M., Olson, M., Petchers, S., Herrador, D., Carranza, C., Trujillo, L., Guadarrama-Zugasti, C., Córdón, A. & Mendoza, A. 2010, 'Effects of Fair Trade and organic certifications on small-scale coffee farmer households in Central America and Mexico', *Renewable Agriculture and Food Systems*, 25 (3): 236-251.
- NSD 2011, *Population and Housing Census of Timor-Leste, 2010. Volume 3: Social and Economic Characteristics*.  
<http://www.mof.gov.tl/wp-content/uploads/2011/06/Publication-3-English-Web.pdf>, viewed 20 October 2012.
- Ostrom, E., Gardner, R. & Walker, J. 1994, *Rules, games, and common-pool resources*, University of Michigan Press.
- Oxfam 2004, *Overview of the Coffee Sector in Timor-Leste*, Oxfam, [http://dev.thegncs.org/sitefiles/file/Timor-Leste\\_Agriculture\\_Coffee\\_Oxfam\\_2004.pdf](http://dev.thegncs.org/sitefiles/file/Timor-Leste_Agriculture_Coffee_Oxfam_2004.pdf), viewed 12 April 2012.
- Parliament of the Commonwealth of Australia 2000, *East Timor: Final report of the Senate Foreign Affairs, Defence and Trade References Committee*,  
[http://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate\\_Committees?url=fact\\_ctte/completed\\_inquiries/1999-02/east\\_timor/report/report.pdf](http://www.aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=fact_ctte/completed_inquiries/1999-02/east_timor/report/report.pdf), viewed 23 April 2012.
- Ponte, S. 2002, 'Brewing a Bitter Cup? Deregulation, Quality and the Re-organization of Coffee Marketing in East Africa', *Journal of Agrarian Change*, 2 (2): 248-272.
- Poulton, C., Dorward, A. & Kydd, J. 2010, 'The Future of Small Farms: New Directions for Services, Institutions, and Intermediation', *World Development*, 38 (10): 1413-1428.
- Putnam, R. D. 1995, 'Bowling alone: America's declining social capital', *Journal of democracy*, 6 (1): 65-78.
- Ruben, R. & Heras, J. 2012, 'Social Capital, Governance and Performance of Ethiopian Coffee Cooperatives', *Annals of Public and Cooperative Economics*, 83 (4): 463-484.
- Scoones, I. 1998, *Sustainable rural livelihoods: a framework for analysis*, Institute of Development Studies, Brighton.
- Uphoff, N. & Wijayarathna, C. 2000, 'Demonstrated benefits from social capital: the productivity of farmer organizations in Gal Oya, Sri Lanka', *World Development*, 28 (11): 1875-1890.
- Valkila, J. 2009, 'Fair Trade organic coffee production in Nicaragua — Sustainable development or a poverty trap?', *Ecological Economics*, 68 (12): 3018-3025.
- Van Deth, J. W. 2003, 'Measuring social capital: Orthodoxies and continuing controversies', *International Journal of Social Research Methodology*, 6 (1): 79-92.
- World Bank 2011, *Timor Leste: Expanding Near Term Agricultural Exports*, World Bank.  
<https://openknowledge.worldbank.org/bitstream/handle/10986/2763/618140v10ESW0G000public00BOX361487B.pdf?sequence=1>, viewed 22 April 2012.