

COFFEE RUST FUNGUS THREATENS EMPLOYMENT COLLAPSE IN CENTRAL AMERICA

Coffee rust is having a serious impact on the livelihoods of hundreds of thousands of poor people in Central America who earn valuable income from growing coffee or working on coffee farms. Rising temperatures due to climate change have encouraged the fungus to spread, however the fundamental problem is the underlying vulnerability of the sector, as coffee growers struggle with poverty, low prices and lack of government support. Oxfam and partners undertook research on the impacts of the fungus on the livelihoods of workers and growers in six areas in Honduras, Nicaragua and Guatemala. This issue briefing presents key findings and suggestions on how to revive the sector and diversify livelihoods to reduce vulnerability.

WHAT IS 'COFFEE RUST'?

Coffee rust – scientific name *hemileia vastatrix*, 'la roya' in Spanish – is a fungus that develops on the leaves of the coffee bush. If not identified and treated, the fungus spreads, blocks photosynthesis and reduces the plant to a skeleton within a couple of weeks.

Coffee rust appeared in Central America in the 1970s, but in the last two years the fungus has attained epidemic proportions and farmers have struggled to combat the infestation. There are two fundamental reasons. The major underlying problem is that coffee growers have suffered for years from low prices for their crop on world markets, which has stifled investment, leading to neglect and poor management. As a result, the fungus is preying on vulnerable hosts. The majority of trees on many plantations are old, often 20 years old or more. In most countries over 80 percent of existing trees are susceptible. Old trees have not been replaced and pruning and care regimes have often not been undertaken properly. In turn, poverty and underinvestment hamper rapid and effective treatment and allow the fungus to take hold. Poor farmers in particular cannot afford fungicides and as a result, stand to lose proportionately more of their coffee plants than better-off growers. State support for small-scale farmers has also been lacking.

Such is the poor state of the industry that it only takes a small change in conditions to have major knock-on effects. The climate of Central America is becoming more volatile as global temperatures rise. Warmer, wetter weather and more intense rainfall characteristic of climate change favour the fungus, encouraging its spread to new areas and to cooler, higher altitudes that were previously spared. New strains have emerged that are more virulent.

The fungus outbreak has exposed the underlying vulnerabilities of the entire coffee sector, altering entire economies and putting the economic stability of several countries at risk. Five countries have declared national emergencies. More than half of the entire region's coffee plantations have been affected and damage so far is put at almost \$500m.¹ Production and export earnings have plummeted in a vicious cycle of higher costs, lower production, and lower quality and, until very recently, lower prices.

WHY IS THERE SUCH CONCERN?

The livelihoods of nearly two million Central Americans depend upon coffee, largely or totally. More than 80 percent of growers are small-scale producers, often lacking other forms of income.² While much political and media attention has focused on the impacts on national exports and economic stability, or on the possible implications for the price of a cup of coffee in the USA or UK, the human damage being caused by the crisis has received less attention.³

Small-scale coffee farmers could see their income fall by 50–60 percent over the four years 2010–2014.⁴ Of even greater concern is that hundreds of thousands of unskilled labourers depend on work in the coffee plantations for a large portion of their annual income, especially during the harvest period from about September/October through to March. In Guatemala for example, where 70 percent of coffee crops had been affected by June 2013, more than one-third of labourers had no other livelihood and 15 percent of small-scale farmers no other source of income.⁵ Across Central America in 2012–2013 some 374,000 jobs were lost – 17 percent of the labour force.⁶

Furthermore, this is happening at a time when other climatic changes are increasing the threats to food security for poor people. Central America is seeing increasingly erratic rainfall and alterations to the timing of the seasons.⁷ Generally, as wet areas become wetter, dry areas are becoming more drought-prone. Poor households which typically own or rent a small plot of land to grow staple crops of maize and beans, and which are entirely dependent on the rains for a good crop, are finding agriculture increasingly precarious. In Guatemala in 2013 Oxfam worked with communities who went through 25 days without rain in July-August, which shrivelled their maize, causing 80 percent losses.

As a result, the period of seasonal hunger when food supplies run low – the *meses flacos*, or thin months – is now extending from four months to as much as nine months. This is the time after income from working at

the coffee harvest has been spent and before the maize harvest, when food prices are at their highest. Furthermore, this year and potentially into 2015, is shaping up to be even more difficult because of the likely onset of the El Niño climate phenomenon.⁸ Poor rains have caused drought or abnormal dryness across west and northern Nicaragua, southern Honduras and central Guatemala.⁹

Even if the rains recover, the *la roya* crisis is set to continue for several years more, because even if farmers can afford to cut down their diseased plants and replace them with younger, healthier and more fungus-resistant varieties and protect them as they grow, it will be three years or more before the new trees begin to yield coffee beans.

WHAT DID OXFAM RESEARCH FIND?

Oxfam and partners carried out research in six areas, two each in three countries – Guatemala, Honduras and Nicaragua – to assess the consequences of the coffee leaf rust plague for the families of the producers and the casual workers.¹⁰ The research used the Household Economy Approach (HEA) (see Appendix).

The HEA studies confirm the serious and worrying impacts of the coffee rust plague and its long-term nature that will blight the future for many unless more action is taken.

What is happening represents the greatest threat to the sectors of society classed under the HEA as very poor and poor, since in most of the areas studied, their income depends completely or almost completely on the coffee harvest. Reductions in income directly affect their ability to buy enough food to feed themselves adequately, since they have little access to land and only grow a small amount of their food needs. They also depend on earning an income to pay their debts so that they can have access to credit in the future. Although those who are averagely well-off generally grow enough of their own food to meet their own food needs, they require income from coffee to buy supplies, employ labour, lend money and restore their plantations.

Oxfam has worked with communities in some of the chosen livelihood zones for several years and has observed how many families resort to desperate measures to survive, especially the poor and very poor. In Guatemala in October 2013, an Oxfam team found that people had reduced their consumption of maize and beans by 30 percent and found that acute malnutrition increased by 40 percent compared with the previous year.

The HEAs, building on previous field visits, found that households are generally not able to find new strategies or alternative sources of income but rather are accentuating their use of traditional strategies which they use to cope with low income and hunger during *los meses flacos*:

- Families are drastically reducing what they eat, eating very little meat and even having to reduce consumption of maize and beans.

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- They are selling precious assets, particularly livestock and poultry.
- They are reducing expenditure on anything not strictly and immediately necessary, including clothing and household items, and going into increasing debt to survive.
- Labour migration is a traditional livelihood or coping strategy for poor and very poor households but with less day-labour in coffee production, there is some evidence of changes to migration patterns. There has been more temporary migration by men, women or whole families to look for work in the agricultural sector, such as sugar cane. This migration, although temporary, is seeing people going further afield for work and staying longer. There is some evidence, but hard to quantify, of more medium-term, semi-permanent migration by men and women to look for jobs further afield and in other economic sectors. Women are working harder and longer in domestic service or in selling.
- People are scavenging in forests for wild products such as mushrooms and herbs and for wood, which can be used by households or sold.

Each of these strategies brings dangers. Reducing food consumption means hunger, loss of energy and susceptibility to illness. Resources obtained by selling assets, or by going into debt, must be replenished if households are not to sink irreversibly into poverty. More migration, whether in time or distance or both, can severely fray family ties.

Alongside this general picture, each country and each zone exhibited particular characteristics that will help to define a locally specific and appropriate response.

Guatemala

In Guatemala coffee rust disease has seriously affected the standard of living of all socio-economic groups in the zones examined. Proportionally, the people who have taken the biggest hits in terms of income losses from coffee have been the relatively better off, but the knock-on effect is that they have slashed work opportunities which has hit the poorest people who depend on day-labour. The poor and very poor can't produce anywhere near enough of their own food and must buy most of it at the market, spending around half their total income on food. So when there is no work, there is no money to buy.

The research also shows, however, that recurrent droughts and neglect by government cause as much or more harm to the poorest as *la roya*. The very poor in particular, who have no land of their own, or barely any, depend greatly on government assistance in the form of money or food. Yet in one of the zones it was notable that both the very poor and the poor households do not have access to social protection programmes, and the proportion of school feeding is very low.

In the zone most dependent on sales of labour the HEA also exposed a vicious cycle of low productivity and high debt levels among the poor and poorest sectors of the population, with expenditure on repaying loans even sometimes exceeding expenditure on supplies and clothing.

Nicaragua

In Nicaragua a prominent feature was the extraordinary levels of inequality in the livelihood zones examined. In one zone a more affluent household has an average of 282 times more land than a poor household; in the other the annual income of very poor labourers – just \$743 – is less than 3 percent of the earnings of the more affluent householders.

For a time the coffee rust disease reduced very poor day labourers down to the level of the survival threshold, with household members eating less than 2,100 kcals per person per day. A programme of renewal of coffee plantations has increased work opportunities and many people who were struggling on the HEA 'survival' threshold have been able to move up towards the 'livelihoods threshold' (see appendix); however, very poor day labourers still struggle to simply eat enough. Very poor smallholder coffee growers were hit twice over, firstly seeing their own crops destroyed and then being unable to find work on other coffee plantations.

Honduras

In Honduras the general standard of living in the areas studied is considerably lower than in the other countries. Many households regularly, and historically, have been unable to meet their calorific requirements and are at risk of food insecurity. Two different zones were examined, one heavily dependent on remittances, the second somewhat more prosperous. In the first the very poor must spend half their income on just buying food, and the poor are not much better off. Gross inequality is again a prominent feature of society and the very poor, who form about one-third of the population, do not receive any assistance from the government. The direct impacts of *la roya* in the zones studied were, however, relatively less than in the other countries. The poorest households tend not to depend so much on work in the coffee sector. Instead they labour in construction, which buffers the impacts to some degree.

WHAT ABOUT THE FUTURE?

In Guatemala, a worst-case scenario in the zones examined is that there will not only be continuing impacts from *la roya* but also further drought, especially if an El Niño develops. If this happens, all sectors of society suffer. Very poor households will experience a drastic drop in income and their ability to procure food because of loss of work. Poor households will experience an even more drastic reduction, because their own maize and bean production will be hit badly as well as labour opportunities. Average households will proportionally lose the most income – half of what they would earn in a normal year – although they have reserves to fall back on. The extent of government support is the crucial factor in how far households fall below the livelihoods threshold and towards, or below, the survival threshold.

In Nicaragua, the scenarios put forward for the two livelihood zones in question take what may be considered a 'best-case' scenario. They imagine what could happen if there was a serious national effort to renew the coffee sector, to take effect over three years. If this happens, it is possible that there would be a partial recovery in production and employment as early as the second year, and by 2016 levels of coffee production could be higher than before the outbreak.

Not only would production recover but, importantly, there would be a big demand for permanent jobs for workers to renew the diseased plants and supervise the growth of new plants. As a result, by the third year the number of permanent jobs in the industry could be slightly more than before the outbreak. However, the same does not apply to temporary jobs because there would still be no coffee to harvest for three years. Some temporary jobs would be converted into permanent ones but even the best-case scenario envisages a massive fall in temporary jobs in the next two years, then only a partial recovery up to the final scenario year (2016). Even after three years, the number of temporary jobs is much less than before.

However, much depends upon the speed with which such a renewal could be carried through, and the scale; if it was done much more quickly the effects on employment would be more dramatic.

WHAT MUST BE DONE?

Agencies working in all three countries have been vocal in calling for co-ordination and action, both to protect small-scale producers in the immediate crisis, but also at the same time to see this as an opportunity to revive the coffee sector and diversify the livelihoods of small-scale producers. The Nicaragua study in particular provides a vision of what could be done that would renew coffee production quickly and with it bring back a degree of employment, which in turn will help protect livelihoods and have positive knock-on effects on the health, education and social cohesion of communities.

How could such a renewal happen? The study suggests two ways. One is that producers finance the renewal of their coffee plantations themselves. The other is that the government join with the producers in a comprehensive and coordinated programme with the aim of renewing every coffee plantation in the country – which could be carried out in as little as one year, according to the study. This option is much more complicated but '... in the long run offers much better prospects for recovery and even for exceeding the level of production seen prior to the coffee rust disease; and with this option lost jobs are recovered and even converted from temporary to permanent'.

Whatever happens, there must be both short-term measures to limit the impact of income losses on day labourers and small-scale producers alongside long-term strategies for renewal or for finding alternative crops.

The study also calls on governments to do more to tackle the ongoing

and underlying problems of drought and poverty that have allowed the *la roya* fungus to thrive. Governments must work to diversify livelihoods through access to education and credit; and they must use and extend the tools that already exist at state level, such as social protection, to support the most vulnerable sectors of society¹¹.

Finally, though, there can be no long-term recovery for the coffee industry or paths out of poverty for the people who grow coffee, if they have to continue to depend upon it, without higher prices on world markets.

APPENDIX

What is the Household Economy Approach (HEA)?

The HEA¹² assesses how households make their livelihoods, i.e. the sum of goods and practices that enable the people in each household to live from year to year and survive hard times. The areas studied each formed a livelihood zone where people generally share similar ways of life. The households in each zone are divided into different socio-economic groups – in this case very poor, poor, average and affluent – and events that affect the households are measured against a baseline or reference year.

The HEA determines thresholds for ‘survival’ and for ‘livelihood protection’. The survival threshold is the amount of food and income necessary to ensure the survival of members in the short-term, to meet the most basic food and non-food needs. The livelihood protection threshold is the total income required to meet not only survival needs but also maintain access to basic services, such as health and education; ensure livelihoods in the longer term, for example through buying seeds; and achieve a minimum standard of living acceptable in local terms.

The HEA approach also provides the ability to devise possible scenarios and evaluate what could best be done to enable people to access food to survive and in the longer term, get back onto their feet and move towards or above the livelihood threshold.

The Oxfam studies had the following objectives:

- To determine the impact that coffee rust has had on the income and access to food of populations that depend on coffee production, according to their socio-economic groups;
- To determine what other sources of income and food have (or have not) replaced coffee production among these groups;
- To analyse what strategies and responses the populations have used to address the reductions in income due to the coffee crop problem;
- To determine different scenarios about the impacts that the coffee rust could have on these populations depending on actions taken.

NOTES

- 1 Inter-American Institute for Cooperation on Agriculture (IAICA)
<http://www.iica.int/Esp/prensa/BoletinRoya/2013/N01/Roya-MA.pdf>
- 2 IAICA, *ibid*
- 3 Several inter-agency reports have catalogued the impacts of la roya. See for Guatemala <http://reliefweb.int/report/guatemala/cr-nica-de-una-crisis-alimentaria-anunciada-desempleo-rural-en-el-sector-cafetalero>, for Nicaragua <http://www.oxfamblogs.org/lac/wp-content/uploads/2014/05/Informe-impacto-de-la-roya-2da-versi-percentC3-percentB3n.pdf> and for Honduras http://www.oxfam.org/sites/www.oxfam.org/files/estudio_roya_hnd.pdf
- 4 Coffee Rust Impact and Actions, A Angel, FUSADES, Let's Talk Coffee presentation, 4 November 2013, <http://www.slideshare.net/alangel88/angel-ltc>
- 5 A Angel, *ibid*.
- 6 IAICA, *op.cit*.
- 7 See, for example, a study describing the impacts on agriculture from changes in the timing of the onset and duration of rainfall in Nicaragua: Macours, Premand and Vakis, 'Transfers, Diversification and Household Risk Strategies, experimental evidence with lessons for climate change adaptation', World Bank Policy Research Working Paper 6053, April 2012, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2045949 See also Jennings and Magrath, 'What Happened to the Seasons?', Oxfam, October 2009, <http://policy-practice.oxfam.org.uk/publications/what-happened-to-the-seasons-changing-seasonality-may-be-one-of-the-major-impac-112501>
- 8 <http://www.ipsnews.net/2014/07/el-nino-triggers-drought-food-crisis-in-nicaragua/>
- 9 FEWSNET global reports, July 2014.
- 10 The areas where the HEAs took place were: In Guatemala, livelihood zone (LH) 8, bordering Honduras and El Salvador and LH9 in the centre of the country; in Nicaragua, the municipalities of San Nicholas and Pablo Nueva in LH 3 and El Cua and La Dalia in LH 12; in Honduras, La Paz municipality in LH6 bordering El Salvador and San Nicholas-Copan municipality in LH7 near the Guatemala border.
- 11 Macours, Premand and Vakis, *op.cit*. also show that combining social safety nets with productive transfers aimed at diversifying economic activities into non-agricultural self-employment boosts income and consumption and can help households manage future weather risks.
- 12 For more about the HEA see e.g. <http://www.heawebsite.org/about-household-economy-approach>

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