An earthquake, which measured 7.8 on the Richter scale, struck Nepal on 25 April 2015. It was the largest to hit the country in 80 years and had an epicentre 77 kilometres northwest of Kathmandu in Gorkha District. Three weeks later there was another powerful earthquake of magnitude 7.4 that caused more damage. According to UNICEF more than eight million people in Nepal have been affected by these two earthquakes, which caused over 8,800 deaths of which almost 2,300 were children. Official reports say that almost half a million homes were completely destroyed and a further quarter of a million have been damaged. The earthquakes also disrupted agricultural production and livestock rearing in areas that depend on these activities for their livelihoods.

Among the areas where Save the Children provided emergency assistance immediately after the earthquake are two remote village development committees (VDCs) in Dolakha where it was the second of the two earthquakes which had the worse effect. As Save the Children plans its longer-term response, which will last until 2018, it commissioned a rapid household economy approach (HEA) assessment to better to understand the livelihoods and needs of households living in these areas.

**Timeline: In HEA the reference year for which information is gathered is typically a consumption year, starting with the period of main production. In this zone the consumption year starts with the rain-fed maize harvest in August. HEA baseline information was collected for the period August 2013 to July 2014, the most recent full consumption year prior to the earthquake. This was a good year for crop production, because of good rainfall and was rated as four out of five by community leaders.**

Collecting this information is necessary to understand how households normally (i.e. without a shock) access their food needs and earn their cash income in the zone. Field teams also collected information on households’ coping strategies and the impact of the earthquakes. When this information is combined with baseline information it is possible to make a projection about the ability of households to access food and cash in the current consumption year (August 2015 to July 2016) and therefore to assess whether they need assistance. The timeline below shows the dates relevant to this analysis. Note that although the earthquake disrupted livelihoods it did not fundamentally change them and so a projection for the current year using the reference year data is perfectly valid.

**Rapid HEA:** A rapid HEA is not a substitute for a fuller HEA but is an adaptation of it for emergency response when a full HEA baseline is not available. The methodology is essentially a normal HEA baseline assessment, but with only five communities visited instead of eight to twelve. The interviews at village level are the same as for a full HEA baseline, including focus group discussions with community leaders and with representatives of the different wealth groups. However, since the main point of this rapid HEA was to assess the impact of the earthquake, a section was added to the community level interview on coping strategies and the current situation, and additional information was collected in focus group discussions with representatives of different wealth groups on the likely situation this year.

**Limitations of this rapid HEA:** This rapid HEA has a number of limitations. First, the team only visited wards within a limited geographical areas, because, with no road access, it had to move on foot. Second, this is a complicated livelihood zone that is undergoing rapid social and economic change as more and more people migrate away in search of labour opportunities outside the zone. And in different wards and even within wealth groups there can be quite 

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1 Field work for the current profile was undertaken in October 2015. The reference year information presented refers to the period August 2013-July 2014. The team members were: Sanu Lal Maharjan (team leader), Madhu Subedi, Durga Prasad Acharya, Shreedari Pandey, Nir Prasad Dahal, Karmadani Chaudhary, Ramu Sharma and Surmila Shakya. The report was prepared by Samuel Dixon (FEG Consulting).

2 Where ‘1’ is a very poor year and ‘5’ is a very good year.

3 Other differences include: two days rather than five of classroom training; six days of fieldwork instead of ten to twelve days; current year monitoring information gathered in addition to HEA baseline information for a reference year; and three days instead of at least six days for analysis and report compilation and writing.
diverse patterns of migration (both length of migration and destination) as well as some households who do not migrate but earn their income in different ways. This is complicated by the presence of Dalits in some, but not all, wards in the zone. Dalits are most commonly found in the two poorest wealth groups and typically have little land and may earn money from doing a profession which is not the case for most households in the zone.

During the fieldwork the team discussed at length how best to deal with different patterns of migration within wealth groups and whether to carry out separate interviews with Dalit households. Ultimately, given time constraints it was decided to include Dalit households in the normal wealth group interviews (they were mostly present in very poor and poor wealth group interviews). Wealth group focus group discussions also included households with varying migration patterns and the field team discussed in each interview what was most typical for that community and encouraged respondents to talk about this case. Inevitably therefore, the picture that emerged from the analysis and presented here is something of a composite. Lastly, interviews in five wards (compared to at least eight in a normal HEA) is probably not enough with a newly trained team that was unfamiliar with a livelihood zone, which was itself unusual. This zone would benefit from a longer study that, depending on resources, focused either on only one migration pattern for each wealth group, or, subdivided some wealth groups to look at different migratory patterns. This is because, for example, very poor households who have a member migrating for six months depend more on their crops and livestock than very poor households with a member migrating for a year and, as such, have a different livelihood pattern. The ‘Sources of Income’ section has further detail on how this issue has been dealt with in this study.

Zone description

‘Dolakha mid-hill zone’ is a temperate zone between 1500 to 1800 metres above sea level, where winter temperatures range from around six to eighteen Celsius and reach summer highs of around twenty. Eighty per cent of precipitation falls from June to October. Water is abundant in the zone in streams and rivers in the valley bottoms. Households do not pay for water either for themselves or for their animals. Water for animals comes from rivers, streams, springs and seasonal pools. Humans may use springs, but also get their water from taps and, during the dry season, wells. There are forests in the zone where households collect firewood. Of the two VDCs visited, one –Jungu- has electricity, and the other- Jhyaku- does not. The map below shows Dolakha district with the two VDCs surveyed indicated by the circle.
The main livelihood activities in the zone itself are agriculture and livestock rearing. Maize and millet are the main rain-fed crops and are intercropped in terraces cut into the hillsides primarily in the upland parts of the zone, on un-irrigated bariland. Rice is grown on khetland, highly fertile lowland areas along the banks of rivers and streams where irrigation is possible. Potatoes and wheat are grown during the winter.

The main livestock in the zone are buffaloes, cattle, goats and poultry and they are reared for several reasons: for their cash income when sold; for draught power; and for their products which are milk, ghee, meat and eggs. Oxen are used to plough the land although the poorest households may also hand till their land. Cows provide milk, buffaloes provide milk and meat, and chickens provide eggs. Goat meat is popular throughout Nepal and goats are the main livestock sold either live or by kilogram of meat when slaughtered. As well as being the main staple grown by poor households maize is used as livestock fodder; households typically give large amounts of their maize crop to their animals and also buy more for use as fodder. Livestock graze freely and are not kept in stalls.

Market access in the zone is very poor. The two main markets, Mainapokhari and Singati, are several hours’ walk away for most households. Very few people own motorbikes, the rocky mountain roads are in bad condition and the zone is inaccessible by vehicle for much of the year, particularly during the rainy months. In Jungu there is a small market, Dohapokhari, where vendors import rice and other goods from Banepa in the Kathmandu valley. Households in Jungu said that they use this market, because – when transport costs from more distant markets are taken into account - it does not cost more and is more convenient to buy in Dohapokhari. The main staple bought is rice. Households also use markets to buy oil, sugar and other non-staple foods, as well as school uniforms and other goods. Because there is such poor access to markets there are almost no crop sales in the zone. Goats are sold to traders who re-sell them in Kathmandu.

Labour migration and remittances are the main source of cash income for households in all wealth groups in the zone. This is increasingly common as more and more people migrate away from the zone for work, where there are more economic opportunities. The result is a zone in socio-economic flux, moving away from a system of subsistence agriculture and towards a remittance and migration-based economy. Sharecropping, for example, where poorer households cultivate some of the land of wealthier households in return for a share of the harvest, seems to be on the decline. Several interviewees said that they did not consider it worth the effort and preferred to migrate.

There is a range of destinations for migration: poorer households tend to seek work in local towns such as Charikot, in Kathmandu and in India (in Sikkim and other Nepali-speaking areas) for around six months of the year, returning to cultivate their land in the zone; while wealthier households more commonly have a household member in countries like Saudi Arabia, Qatar and Malaysia on contracts of two to three years, because they can raise the money to send them there. However, this generalisation, which may be described (as far as there is one) as the typical picture, also hides some variation. Productive members of poorer households without land may migrate away for longer than six months, sometimes even for the whole year, returning to the zone only to celebrate Dashain. However, in some cases they may also not migrate at all, earning their money from unskilled casual labour in the zone, or – in the case of some Dalit households – from skilled labour for example as blacksmiths. There are also, among better-off households, those who do not migrate abroad, including those with salaried jobs, those on army pensions and those who trade in Kathmandu. Despite all this migration the village remains important as an ancestral home and many people return for Dashain, the Nepalese national festival, each year even if they spend much of the rest of the year elsewhere.
The main rains last from June to August and determine seasonality in the zone; the main rain-fed maize harvest—the beginning of the consumption year—is in August. Households then harvest millet in November and rice from November to December, although it is primarily middle and better-off households who have access to the irrigated land needed for rice cultivation. Rice is the main staple food and households buy it year round, but the peak months are from April to July when poorer households have used up their own harvests. These are the most difficult months for poorer households although they are relieved somewhat by the winter wheat harvest in April. While households also grow and eat potatoes they receive only a small percentage of their minimum food needs from the potatoes they harvest in February. Kitchen gardening continues throughout the year and households produce leafy vegetables, radishes, onions etc, which provide few kilocalories, but which increase the diversity of their diets.

Cows and buffaloes most commonly give birth in July and produce milk from August till around April, longer for buffaloes and shorter for cows. Households sell goats throughout the year, but the peak months are in February and March, and in October. In February and March the condition of livestock is at its worst (often due to diarrhoea) and households sell goats for fear they may otherwise die. There is also a festival that falls either at the end of March or the beginning of April when demand for meat is high, another reason for increased goat sales around this time. In October households sell goat to help pay to celebrate Dashain. Note that October is also a difficult month for poorer households because they spend a lot on this festival.

Seasonal migrants leave the zone in around December after the main cultivation period and after celebrating Dashain, and return in around June for the start of the cultivation period. Poorer households also earn money from agricultural labour around this time. Note that this migration pattern is only indicative and some households have members who migrate away for nine months or even for the whole year if they have very little land. Those migrating further afield, for example to the Gulf states such as Qatar and Saudi Arabia, are away for two to three years at a time and tend to send remittances around festival time in October and around planting time in June.
The main determinants of wealth in the zone are the amount of productive land owned and the income productive household members can earn from migration. Middle and better-off households own more productive land and also own most of the fertile khetland where they are able to cultivate rice. Access to agricultural inputs, such as improved seeds, increases with wealth.

It is the middle and better-off households who are able to afford to send people on contracts to Gulf countries. To do this they are likely to take a loan from the local cooperative, for which their land and livestock holding serves as collateral. The money from this loan pays for the air fare and the agent to negotiate the contract. The better-off have better contacts and can afford to use more respectable agents than middle households, which seems to mean in turn that migrants from these households earn more when they migrate abroad. Very poor and poor households do not have such collateral and so cannot typically afford to send someone to these countries. In this sense the land and earning potential from migration are complementary. However, there also seems to be a tension between these two determinants of wealth, as the importance of migration increases over time while that of land diminishes. These developments are related since increased migration has contributed to a shortage of labour in the zone that reduces the ability of households to cultivate their land. Better-off households, for example, do not typically cultivate all the productive land they own. In some relatively unusual cases poor households have also taken large loans- a huge risk, given their situations- to send household members on contracts to Gulf countries, which is likely to result, in the long term, in a change in their status. In such cases these households may leave a large portion of their land fallow or share-crop it out to other poor households.

There is not a strong relationship between household size and wealth; very poor, poor and middle households typically have five people in their household, the better-off have four which does not include the one person who is typically away for the whole year. In the table the ranges reflect the spread of results for each wealth group whereas the figure in brackets is the ‘typical’ household size as agreed by the field teams during the analysis of the results. Female-headed households do not make up the majority of any wealth group, but appear to be concentrated mainly among the poor and very poor.

Livestock holding increases with wealth, but it appears to be an indicator rather than a determinant of wealth. Livestock is kept less as an asset and a means of saving than as a source of meat, milk, draught power and cash when sold (particularly goats). The better-off and middle have buffaloes and cows which provide them with milk. The better-off try to ensure they have milk for as much of the year as possible. Since the local breeds of buffaloes and cows in the zone only give milk in the months after they have given birth and only give birth once every two years on average, the better-off in some cases even sell their buffaloes once they have stopped lactating and buy at more cost a female buffalo that will give birth that year and therefore give milk. There is also a system common in some, but not all, areas visited where the very poor and poor look after the livestock of the middle and better-off and receive one of the calves born in payment. The very poor do not typically own cattle.

The middle and better-off own a pair of plough oxen, the poor may own one and the very poor do not typically own any. When poor households own one ox they lend it to other households in return for the same favour so that they have a pair of oxen when ploughing.
Sources of food in the reference year

The graph to the right shows how households in different wealth groups accessed their minimum food needs between August 2013 and July 2014. Very poor households did not access 100 per cent of their minimum requirement, deciding instead to prioritise other expenditures. All other groups consumed at least 100 per cent of their requirement, the middle and better-off considerably more. It is likely that they did not eat all this, but used some of it to provide meals for poorer households and for other purposes, not fully captured during the fieldwork.

In the graph, food access is expressed as a percentage of minimum food requirements, taken as an average food energy intake of 2100 kcals per person per day.

Since landholding and access to inputs increases with wealth, so does the contribution of a household’s own crops to their minimum food needs. Better-off households receive four times more of their food requirement from their own crops than do the very poor. With more of their kilocalories coming from their own harvest the better off a household is the less staple food they need to buy. Poor, middle and better-off households primarily buy rice, the preferred staple, and it is only very poor households who also buy significant amounts of maize and millet, which are cheaper.

Conversely, the amount of kilocalories coming from non-staple foods such as sugar, oil, meat and fish increases with wealth. So that they can afford at least some meat poorer households may buy she-goat meat, worse tasting but less expensive than the meat of castrated male goats. Since they typically own only goats, which are not milked, very poor households receive none of their minimum food requirement from their own livestock products. Poor, middle and better-off households receive increasingly more of their minimum food requirement from livestock products.

Very poor, poor and middle households typically include a person who migrates away for part of the year and eats outside the household during this time; this is represented by the ‘food eaten on migration’ category. Better-off households have one person who is away for several years at a time; this person has not been included as part of the household since all their food is eaten away.
The graph to the left shows sources of cash income for households in different wealth groups in the mid-hill zone for the period August 2013 to July 2014. The main source of income for all wealth groups is cash earned from seasonal labour migration or remittances where household members migrate away for years at a time. Remittances are sent to local towns (Charikot and Mainapokhari) via banks whereas labour migrants carry the money they have earned back with them when they return to the community.

Since how long and where a person migrates seems to vary between ward and between wealth group the picture presented here is a composite one.

This shows a picture (based on the team’s discussions during the fieldwork) of very poor and poor households who typically have a member who migrates for six months, of middle households who have a member who migrates for nine months (since approximately half those middle households participating in wealth group interviews were away for six months and half were away for a full year, often in the Gulf), and of better-off households who receive remittances from someone who is permanently away.

The very poor and poor earn cash from local casual labour, often agricultural but also construction work, primarily for middle and better-off households. Men are paid more per day than women for local labour. There is also a system of labour exchange in the zone where households from all wealth groups work on each other’s fields. For example, the middle and better-off may loan their ploughs to poorer households for a day in exchange for four days’ manual labour.

Only the better-off earn any money from crop sales and very little at that, because the area is so poorly connected to markets. The poor, middle and better-off also receive a small amount of income from selling meat of goats they slaughter, categorised in the graph as livestock product sales. Slightly more income comes from sale of livestock, which is primarily live goats.

Households in all wealth groups take loans, often from local cooperatives where interest is around 16%. The better-off also earn a small amount of money from giving loans to the very poor and poor groups, although with the advent of cooperatives this practice seems to have become less common. Still though, not having enough collateral to secure more than a small loan from a cooperative, poorer households may go to their richer neighbours. Better-off households may then take a loan from the cooperatives and provide this as a loan to poorer households at a much higher rate of interest (around 24%). Middle households may sometimes also give such loans and it is possible that this practice is underestimated in these results.
The table below shows ranges of cash income earned by different wealth groups during the reference year excluding income from loans. Note that there are few local markets and that while households do buy commodities for cash they also exchange them without cash and produce their own crops and livestock products.

### INCOME SUMMARY TABLE

<table>
<thead>
<tr>
<th>Wealth group</th>
<th>Very poor</th>
<th>Poor</th>
<th>Middle</th>
<th>Better off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical annual income range per household EXCLUDING loans (NPR)</td>
<td>60-70,000</td>
<td>80-90,000</td>
<td>120-170,000</td>
<td>190-310,000</td>
</tr>
<tr>
<td>Average annual income per person EXCLUDING loans*</td>
<td>NPR 13,200 or US$ 135</td>
<td>NPR 17,200 or US$ 175</td>
<td>NPR 26,600 or US$ 270</td>
<td>NPR 63,900 or US$ 650</td>
</tr>
</tbody>
</table>

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*The average exchange rate during the reference year (Aug 2013-July 2014) was US$1 = NPR 98.3 ([www.oanda.com](http://www.oanda.com)).
Expenditure patterns in the reference year

The graph to the right shows expenditure patterns for the reference year (August 2013 to July 2014). While total expenditure increased with wealth this graph illustrates the proportion of each wealth group’s total expenditure spent on different goods.

The overall proportion of expenditure on food (and on staple food when singled out) decreased with wealth from over 40 per cent for the very poor to under ten per cent for the better-off.

The graph provides a breakdown of total cash expenditure according to category of expenditure.

All households spent a similar proportion of their total expenditure on: household items (five to seven per cent) which includes tea, salt, soap, utensils, spices, batteries and lighting; clothes and bedding (seven to eight per cent); and education and health (seven to eight per cent). This last fact is remarkable, because despite their low incomes and - in the case of the very poor, despite not consuming one hundred per cent of their minimum food needs - very poor and poor households are investing a lot in education. However, drop out rates for children from very poor and poor households are reportedly higher than those for children of wealthier families, one of the effects of chronic poverty.

Proportional expenditure on transport and phone credit increased with wealth (from three per cent for the very poor and poor to eight per cent for the better off) as did expenditure on inputs (four per cent for the very poor and almost twenty per cent for the better-off) and other items (eight and nine per cent for the very poor and poor, and twenty to twenty four per cent for the middle and better off respectively). Inputs includes: animals drugs, salt and fodder for animals, livestock purchase, seeds, fertilizer, and tools. Other expenditure includes: house repairs, festival expenditures, furniture and electronics, cigarettes, some toiletries, investment in gold, and savings.

Note the large amount of expenditure on loan repayments, decreasing with wealth from the poor to the better-off and lower for the very poor than the poor because the very poor do not have enough collateral to take larger loans. Loans taken from cooperatives are paid back over eighteen months.\(^5\)

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\(^5\) In this analysis the entire loan repayment has been included in the figures for the reference year. This is because to include only a part of the loan repayment would make households’ cash incomes appear artificially higher than their expenditure, whereas actually they would still have an outstanding loan repayment. and over a period of longer than a year their income and expenditure would be seen to balance.
The graph to the right shows total income for households in different wealth groups during the reference year. It combines both cash and food income (including households’ own crop and livestock production) and expresses it in terms of minimum food needs; to do this cash income has been converted into kilocalories using the price of rice, the main staple in the zone.

The graph provides a breakdown of total cash expenditure according to category of expenditure.

The graph also shows two thresholds – the Survival Threshold and the Livelihoods Protection Threshold. These thresholds were defined by the field teams during the analysis based on the baseline information. They are set relative to local conditions rather than relative to international standards, such as Sphere.

The Survival Threshold is the amount of food and cash income required to ensure survival in the short-term (i.e. to cover minimum food and non-food needs). This includes expenditure on soap, salt and firewood (a small fee is paid to collect firewood in the forests) used for cooking food. The Livelihoods Protection Threshold is the amount of food and cash income required to protect local livelihoods. This means a level of income that gives people the option to maintain expenditure on basic non-food goods and services at the levels prevailing in the reference year. This does not mean that people will have exactly the same standard of living as in the reference year (since the livelihoods protection basket excludes non-essential items such as cigarettes). But it does mean that – provided they prioritise these items – households can continue to spend similar amounts of money on inputs for livestock production and on health and education as in the reference year.

Besides these essential non-food goods and services, the Livelihoods Protection expenditure basket also contains a number of items that – while not absolutely essential for survival and the protection of livelihoods – can nonetheless be considered essential in terms of sustaining a minimum locally acceptable standard of living. In Dolakha mid-hill zone these include some expenditure on non-staple foods (sugar, oil, lentils and meat), some expenditure on clothing and bedding and some expenditure on Dashain. The graph shows that all households lived above their survival and livelihoods protection thresholds in the reference year, although in the case of the very poor only just.
Hazards

During interviews with community leaders respondents were asked about the main chronic hazards affecting this zone. These are:

- drought caused by poor performance of the rains (not every year);
- soil erosion and landslides which as well as affecting agricultural production can cut the zone off from markets in Kathmandu that are used to import rice in to the zone (every year);
- crop and livestock diseases (every year); and
- hailstorms (roughly one year in three).

Key parameters for monitoring

The key parameters listed in the table below are things that make a substantial contribution to household food and income sources in the part of the mid-hill livelihood zone that was assessed. The quantity column includes parameters for which the amount is important (e.g. the amount of maize produced or the typical length of migration and number of migrants per household); the price column includes parameters for which the price is important (e.g. the price of goats or the daily labour rate or the amount of money migrating household members can save per month when away). These parameters should be monitored to indicate potential losses or gains to local household economies, either through ongoing monitoring systems or through periodic assessments.

<table>
<thead>
<tr>
<th>Item</th>
<th>Key Parameter – Quantity</th>
<th>Key Parameter – Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crop production</td>
<td>• Maize</td>
<td>• Meat sales from slaughtered animals</td>
</tr>
<tr>
<td></td>
<td>• Millet</td>
<td>• Buffalo sales</td>
</tr>
<tr>
<td></td>
<td>• Rice</td>
<td>• Cattle sales</td>
</tr>
<tr>
<td></td>
<td>• Wheat</td>
<td>• Goat sales</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cow and buffalo milk</td>
</tr>
<tr>
<td>Livestock production</td>
<td>• Meat sales from slaughtered animals</td>
<td>• Meat sales from slaughtered animals</td>
</tr>
<tr>
<td></td>
<td>• Buffalo sales</td>
<td>• Buffalo sales</td>
</tr>
<tr>
<td></td>
<td>• Cattle sales</td>
<td>• Cattle sales</td>
</tr>
<tr>
<td></td>
<td>• Goat sales</td>
<td>• Goat sales</td>
</tr>
<tr>
<td></td>
<td>• Cow and buffalo milk</td>
<td></td>
</tr>
<tr>
<td>Other food and cash income</td>
<td>• Unskilled local labour</td>
<td>• Unskilled local labour</td>
</tr>
<tr>
<td></td>
<td>• Labour migration</td>
<td>• Labour migration</td>
</tr>
<tr>
<td></td>
<td>• Remittances</td>
<td>• Remittances</td>
</tr>
<tr>
<td></td>
<td>• Loans</td>
<td>• Loans</td>
</tr>
</tbody>
</table>

It is also important to monitor the prices of key items on the expenditure side, most particularly rice, but also non-staples such as sugar and oil.

Between the earthquake and fieldwork: coping strategies and relief

The rapid HEA involved a detailed analysis of livelihoods during the reference year and of the current consumption year from August 2015 to July 2016. It is this period for which a scenario had been prepared (see below). However, although most of the analysis here does not pertain to the period immediately after the earthquake, during both wealth group and community leader interviews respondents discussed the situation during this time and how they had coped. This information is presented below, but note that it was not collected as systematically as the other information presented in the baseline and the scenario analysis.

The two earthquakes happened in April and May, which means that they did not disrupt the harvests in the consumption year August-2014 to July 2015, because they had already happened (see seasonal calendar above). The biggest problem caused by the earthquake is the destruction of people’s homes and along with this any food stocks they had. The cash income of many households was also disrupted by the earthquake, because migrants returned to the zone immediately following the earthquake, shortening the length of their migration. The very poor and poor did less
agricultural labour and therefore received less cash income partly because they spent their time building temporary shelters for their families.

After the earthquake households in the part of the zone assessed received emergency aid from Save the Children and also from the government. This included: food items (rice, pulses, oil); blankets; jerry cans; kitchen utensils; plastic sheeting; shelter kits; and cash. It seems that most households still have the kitchen utensils and sheeting they received, but that they have used up all or most of the cash and food they were given.

When asked about the coping strategies they had used following the earthquake some wealth group interviewees from the very poor and poor groups said that they had reduced expenditure on education—a self-evidently harmful coping strategy. There was not enough time to look in detail at this and it would be sensible to monitor school drop out rates in the coming year. In one interview respondents said they had reduced their food consumption immediately after the earthquake in the short term. Apart from this, however, it seems that in general households did not need to use damaging coping strategies. They commonly reduced expenditure on non-essential things, such as sugar and meat, clothes and Dashain, and have increased expenditure on these items as they have managed to recover. In general, the field team was struck by how successfully households had coped with such a large shock. Undoubtedly the aid households received has helped them to do this.

HEA scenario analysis: The projected situation for the period August 2015-July 2016

Scenario (or outcome) analysis is the term used to describe the process of taking information on the current situation and combining it with information on the reference year (the baseline) to project total income for the current. Three types of information are combined for HEA scenario analysis: information on baseline access; information on a hazard or change (i.e. factors affecting access to food/income, such as crop production or market prices); and information on coping strategies (i.e. the sources of food and income that people turn to when exposed to a hazard). The approach can be summarised as follows:

Baseline + Hazard + Coping = Outcome

The output from an outcome analysis is an estimate of total food and cash income for a projected period, once the cumulative effects of current hazards and income generated from coping strategies have been taken into account. Projected total income can then be compared against the survival and livelihoods protection thresholds (see above) to determine whether an intervention of some kind is required.

Regarding coping strategies, only those strategies that are appropriate responses to local stress are included. In this context, appropriate means both ‘considered a normal response by the local population’ and ‘unlikely to damage local livelihoods in the medium to longer term’. Damaging coping strategies (including an unsustainable increase in livestock sales, children migrating for labour or increased debt) are not included in the analysis, because an intervention should ideally happen before households need to resort to these strategies.

Problem specification. The next step is to produce a problem specification for the current consumption year (August 2015 to July 2016). A problem specification is the translation of a shock or other change into economic consequences at household level. It allows the change (positive or negative) to be mathematically linked to each relevant livelihood strategy. Information on the current situation and the likely situation later in the current consumption year was collected during the fieldwork, for example by asking households how much maize they harvested in August to September this year and comparing this to what they harvested during the reference year. Unfortunately, it has not been possible to use official monitoring data, because it was either not available or because the field team did not manage to get access to it. However, in several cases (such as for harvests this year) the information used is more locally specific and more up-to-date than monitoring data and even if monitoring data had been available would be given more weight.

Information on inflation between the reference and current year has been estimated based on price data collected during the fieldwork and the team’s existing knowledge. The field team did not manage to get access to Nepal Rastra Bank’s inflation data and consumer price index. Should it be possible to get this data and should any further information become available this problem specification can and should be revised to produce an updated analysis. Despite this, every effort has been made to think through all elements of the problem and to use all information available. Any assumptions made represent the consensus of the field team and were discussed during analysis.

Markets. It was not possible to visit Singati one of the two main markets in the zone during the rapid HEA fieldwork. The team passed through Mainapokhari, but did not have time to carry out a market assessment; however, the market appeared to be functioning. In Dohapokhari the team spoke to a vendor who said that he would be able to cope with increased demand for rice in the coming year as a result of the poor performance of the various cereal harvests. In interviews with community leaders, respondents said shops were functioning as before the earthquake and no one
raised the possibility of a market problem in the coming year. It has been assumed in this analysis that markets will continue to function as normal. However, this assumption should be revised should there be any indications to the contrary, for example should a landslide block the road, or should the border blockade between India and Nepal (ongoing at the time of writing and badly affecting fuel supplies) have an effect on the ability of traders to supply this zone with rice.

**Crop production.** The earthquake disrupted the weeding of the new maize crop and the planting period of the millet and rice crops, which households will harvest and rely on in the August 2015 to July 2016 consumption year. Immediately after the earthquake people were scared to go to their fields and were preoccupied with building temporary shelters following the destruction of their houses. The earthquake also destroyed some of the irrigation canals used in rice cultivation. In addition, the most recent rainy season was poor, which combined with the effects of earthquake has and will contribute to worse harvests in the current consumption year when compared to the reference year.

Field teams collected information on the most recent maize harvest (which at the time of the fieldwork had just happened) and the likely performance of the forthcoming millet and rice harvests, based partly on the area that households had managed to plant in the current year compared to the reference year. The following table shows the reported or projected changes in each harvest used in this scenario.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Crop production scenario comparing reference year and current year (a change of -70% indicates a 70% reduction in the current year compared to reference year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maize</td>
<td>-70%</td>
</tr>
<tr>
<td>Millet</td>
<td>-25%</td>
</tr>
<tr>
<td>Rice</td>
<td>-50%</td>
</tr>
<tr>
<td>Wheat</td>
<td>+/- 0%</td>
</tr>
</tbody>
</table>

**Livestock production.** As well as crops it is important to examine the likely effect of the earthquake on livestock, which is an important source of both food (milk and meat) and cash income (mainly goat sales) for households in the zone. The field team collected information on typical herd sizes in August 2013 and August 2015, so that any change in the herd size (given similar herd dynamics) could be used as a proxy for goat sales and as a proxy for the number of lactating female animals. Households are likely to own - one part of projecting milk production for the coming year. Overall there seems to have been no change in herd sizes between the reference year and the current year and although some livestock died during the earthquake and some livestock were stillborn, this is not typical of herds in the zone. Given this, households should be able to continue to sell similar numbers of goats to the reference year and in the case of the middle of the better-off who have larger herds can actually sell more as a coping strategy without endangering their herds and therefore their livelihoods in the longer term.

The other information needed to project milk production in the coming year is whether there has been any change to the period of lactation and the amount of milk produced per animal per day. When asked, interviewees mostly said that there had been no change to date, although in some interviews respondents did say that milk production had reduced. Given the importance of maize as fodder and the significant reduction in the maize harvest this year, however, the field team decided to assume that milk production will reduce later in the year to below reference year levels: a 20% projected reduction in milk production (and therefore consumption) was used in this scenario.

**Migration, remittances and local labour.** The other main sources of cash income in the zone are labour migration, remittances and local labour. In this scenario it has been assumed that households cannot increase their income from remittances as a coping strategy, since the person who is abroad is already sending back as much money as possible anyway. Respondents were also asked whether labour migration would increase in the coming year either with household members migrating away for longer or more household members migrating. This seems likely to happen, but only a 10% increase has been allowed in this analysis compared to the reference year because any significant increase in income from labour migration is a harmful coping strategy for three reasons. First, household sizes are so small that there are not enough adult males in most households for two household members to migrate, so any increase would likely require children to migrate. Second, if household members migrate for longer this will mean they have less time to spend on their own harvests in the zone itself, which will also have a detrimental effect on households’ total income. Third, women do not typically migrate (although there are cases of this) and remain at home to look after the children, the livestock and the fields and any significant increase in migration will greatly add to the burden on them. The burden on women will anyway increase this year as households cope with and try to recover from the effects of the earthquake.

As for local labour, households said they will seek more local labour (both agricultural and construction) this year and, given the need to rebuild it is likely that there will be more labour opportunities available. An increase of 20%
compared to the reference year has been included in this scenario.

**Price changes and inflation.** The last thing to consider in preparing a scenario for the coming year is any change in prices compared to the reference year. The main staple purchased is rice and, based on data collected during the fieldwork, the price of rice was 33% higher in October 2015 than in October 2013: this 33% figure has been used in this analysis. Based on data collected during the fieldwork the price of meat sold has increased by 25% compared to the reference year and the price of live goats has increased by 17%. There was no data collected on cattle and buffalo and it has been assumed that the price of these has increased by 17% too, in line with the price of goats.

Inflation between the reference year and current year has been estimated at 20%. This figure has been applied to all sources of cash (such as loans) and expenditure (such as items included in the livelihoods protection basket) for which there is no other available data. The exception is the income from labour migration and remittances since households often migrate abroad where inflation rates may be different from Nepal. The team decided to assume that income from these sources had not increased in line with Nepalese inflation.
Scenario for August 2015 - July 2016 with and without shelter

Based on the scenario described above and illustrated in the graphs below very poor, poor, middle and better-off households are all likely to face reduced income in the period August 2015 to July 2016 compared to the reference year, but will not have a livelihoods protection deficit. However, a serious effect of reduced income is to make poor and particularly very poor households more dependent on loans to protect their livelihoods than they were in the reference year. Without income from loans both very poor and poor households would –in this scenario- face livelihoods protection deficits.

Note: The charts show estimates of total income (food plus cash) for the reference year on the left and the scenario year in the middle bar (labelled ‘Curr.year’). These are compared with the intervention thresholds (in the right-hand bar) to indicate whether there is a deficit this year. The pink section of the thresholds bar represents the survival threshold, while the pale blue section represents the livelihoods protection threshold.
While in the scenario above households in all wealth groups should not face livelihoods protection deficits in the period August 2015 to July 2016, this does not take account of the problem of shelter. Many households in the zone had their houses destroyed or irreparably damaged in the earthquake and hope to rebuild in the coming year. The government of Nepal has said it will provide 200,000 Nepalese rupees (roughly 2,000 US dollars) to all households who have lost their homes. This is the estimated cost of a very basic one room house and the figure assumes that households will have salvaged some of the materials from their old house. Households—particularly in the middle and better-off groups—are accustomed to bigger houses and are likely to want to build something larger that will cost more.

In the scenario below the cost of rebuilding a basic house (i.e. 200,000 Nepalese rupees) has been included in the livelihoods protection threshold. In this scenario all wealth groups face a large livelihoods protection deficit. For the very poor this deficit is 315 per cent (around 200,000 Nepalese rupees); for the poor it is 280 per cent (around 177,000 Nepalese rupees); for the middle it is 220 per cent (around 139,000 Nepalese rupees); and for the better-off it is 109 per cent (around 55,500 Nepalese rupees). This deficit is so huge that it will be extremely difficult, if not impossible for households in the very poor, poor and middle groups to rebuild their houses without external support. It also means that if these households do not receive support to rebuild they may be forced to resort to harmful coping strategies such as taking on large levels of debt, reducing the food they eat or sending their children to work. The only group that might manage to cope (and even they face a significant deficit) is the better-off. Given this, it is important that there should be communication to households on whether and when any cash support will come. Some migrants said they might stay in the zone after Dashain in the hope that they would receive money from the government and be able to rebuild their houses before they migrated. Others said they would not wait, but leave and come back should they receive any money from the government. In either scenario households’ cash income from migration is likely to be disrupted compared to a normal year and clearly communicating to households what they can expect and when would at least allow them to plan.
Scenario analysis including shelter

Note: The charts show estimates of total income (food plus cash) for the reference year on the left and the scenario year in the middle bar (labelled ‘Curr.year’). These are compared with the intervention thresholds (in the right-hand bar) to indicate whether there is a deficit this year. The pink section of the thresholds bar represents the survival threshold, while the pale blue section represents the livelihoods protection threshold.
Recommendations and development priorities of communities

Looking at the two scenarios described above, whether or not households manage to cope in the coming year will depend heavily on whether they receive adequate external support to rebuild their houses. This is the biggest problem facing households in this zone. Advocacy to the government and donors is needed to ensure that households receive this support. Without it, the livelihoods protection deficit for all wealth groups will be so huge that any other intervention—such as skills training in construction that could be used both locally in rebuilding and on migration to secure more skilled jobs—is unlikely to make a significant difference in the short term, although it should ease the situation of households slightly, and make a greater difference in the long term.

Without support to rebuild, it is possible that many households will remain in temporary shelters which may have a bad effect on children and elderly sleeping in poor conditions (this is already reported) and will make it impossible for households to stock their harvests as they normally do without the high risk of them being eaten by mice or other pests. Some households, for example said they would give a larger than normal proportion of their maize harvest to their animals rather than risk its being destroyed, because they had nowhere to stock it. One way to support households would be to help them to keep safely some of their harvest for seed by providing seeds bags that are protected from insects, air-tight and free from damp.

In the longer-term, given that most household income comes from migration outside the zone and remittances, any programme that supports migrants to work in better remunerated, more secure jobs (both in terms of a steady flow of income and in terms of conditions) should be a priority. However, when respondents were also asked about their development priorities, although some said they wanted to travel abroad and earn more, the majority of suggestions were for projects in the zone itself. The list below shows these suggestions; all would require further detailed feasibility studies.

**Ideas highlighted during community leader and wealth group interviews:**

- skills training (e.g. electric wiring, dress-making, tailoring, poultry farming, goat-keeping, carpentry, masonry);
- support to agriculture (e.g. development of cash crops such as cardamom, hybrid seed distribution, technical training, support for irrigation);
- market development (e.g. for cash crop and dairy products); and
- improvement of roads.