

Research Findings and Analysis

Research Methodology

The study was carried out in four Kebele's; Adey, Gelsha, Asgori and Dajolie out of a total of 31 Kebele's within Dessie Zuria Woreda, South Wollo Zone, Amhara Province, Ethiopia. A Kebele is the smallest administrative unit in Ethiopia and in Dessie Zuria each Kebele comprises of 10 Gots, which themselves contain a number of hamlets. The four Kebele's were selected from the 11 Kebele's in which Concern has decided to focus their initial programme intervention in Dessie Zuria, all of which are located in the Higher Highland and Highland areas¹, based on a livelihoods analysis they carried out in June 2006 (Concern, 2006). These four were chosen based on their agro-ecological and topographical representation of the higher highland and highland area of Dessie Zuria as a whole and their relative ease of access given the time limitations. The research took place over three weeks, the first identifying the Kebele's to visit, finalizing and giving training to the team on the research methods to be used, mobilising the communities in question and conducting a trial day in the field of the research tools selected. The second and third weeks were spent actually doing the research. For a detailed timetable of events see Annex 1.

In order to best learn the respective communities understanding of the hazards they face and their vulnerability to them, qualitative participatory data collection methods were used and it was decided that at least a minimum of 48 continuous hours needed to be spent in each Kebele. This allowed the research to start earlier and finish later each day due to their being no need to travel, ensure as much of the area as possible was visited and facilitate establishing first hand appreciation of the weather and living conditions at that particular time to allow some first hand comparison between the Kebele's. To achieve this a team of four was established, the author as team leader, a translator responsible for translating group discussions and interviews as they progressed and to deal with logistical arrangements and 2 facilitators / note takers, one male and one female so as to ensure that a male was leading a discussion with men, and more importantly, that a woman was facilitating discussions with women.

It was decided to combine staying two nights in each Kebele with Focus Group Discussions (FGD's), Semi-Structured Interviews (SSI's) and Transect Walks as the primary research methods. The plan was to conduct four FGD's, one with members of the women's, men's and youth associations and one with a selection of Kebele leaders. The Kebele Chairman of each Kebele, the administrative leader elected by the people, was visited the week before we started to explain the aim of the study and to ask him to invite between 8 and 12 people to attend each group discussion, representing differing Gots and well being statuses but that majority of the participants should be as much as possible from poorer households. For the youth group it was also requested that there be as many females as males invited to attend. These four groups would, it was hoped, give as broad a representation of the community as possible in the timeframe and assumed that, in general, the poor are more vulnerable to hazards than the better off. (See chapter two).

To supplement and help triangulate the information gathered from the group discussions in each Kebele, it was hoped to do a minimum of six semi-structured interviews at people's homes or places of work and two transect walks to hopefully cover a large area of the Kebele with the intention of casually chatting to any people we passed to obtain relevant information of what they were doing, the area in question etc... The selection of interviewees was based

¹ Dessie Zuria has three main agro-ecological zones, Higher Highland, Highland and Midland which constitute 32%, 25% and 43% of the Woreda respectively.

on where we visited on the transect walks and deliberately targeted the poorest and potentially the most vulnerable households. Therefore whilst walking we would ask whoever was accompanying us to direct us to the poorest households in each Got, with our focus on those most frequently identified as the most vulnerable in the FGD's, women and female, elderly, disabled or youth headed households. Both the FGD's and SSI's were given a trial run as part of team training and to establish whether the intended questions initiated a good response, and this was carried out in Tebasit Kebele, also in Dessie Zuria.

As the concept of hazards and vulnerability can be quite complicated especially when explaining to and asking questions of a group that is new to the subject, it was considered necessary that the FGD's should have a simple tool as the focus of discussion that concentrated on a subject matter that would be relevant to and easy for them to talk about. Therefore it was decided that the concept of a timeline be used focusing on the last 10 years with questions asking participants to consider what had been difficult or problematic, why, how they coped and to compare and contrast the years discussed. They were asked to consider; the current year, last year, the worst year and the best year.² The comparison was facilitated through proportional piling by asking the group to place a certain number of stones on the years discussed to represent how bad the year was, and therefore easing comparison between years as there was a visual representation. Often the number of stones attributed would have to be adjusted once the group realised that some piles were close to equal in size, sparking yet more discussion. Once this had been done the focus moved more to trends, asking whether life had become harder or easier over the last 10 years and what their main fears for the future were and how they thought these could best be addressed.

During the third week, and therefore for Asgori and Dajolie, the second half of the FGD's was slightly modified as discussion had not been as lively and fruitful as had been hoped or expected. Therefore in trying to establish trends the focus was more on what had changed in their lifetime and whether this had had a positive or negative impact on their livelihood and an actual ranking of problems they encounter now was included, with the most serious being ranked first. It had been found that asking about fears for the future invariably had the response that they did not know because it was entirely in the hands of God, and although this is interesting it was felt they could offer more information if we asked the questions in the right way.

Also asking about changes in their lifetime generally sparked more discussion than asking whether life was harder or not. The final theme raised of asking for their suggestions for addressing their problems remained the same as the second week. See annex 2 for an example guide used by the facilitators during each FGD). The modifications above withstanding, the format for the FGD's for every group in each Kebele was deliberately the same to allow comparison between groups to see if there were differences in experience and interpretation amongst them and to allow comparison between the Kebele's themselves, whilst allowing flexibility to explore issues raised of interest.

Due to adopting a broad understanding of what a hazard means and acknowledging that vulnerability is very complex (see Chapter 2) the FGD's and interviews deliberately avoided

² The Ethiopian calendar is always 7 years and 8 months behind the Gregorian calendar that we follow in the West. Although their year consists of 365 days and 366 in leap years, they have 13 months rather than 12. The Ethiopian New Year is 11th September, or 12th in Leap Years, by the Gregorian Calendar, and the 1st September by the Ethiopian Calendar. In Ethiopia the current year is 1999. Therefore discussion in the FGD's and SSI's about this year actually refers to Ethiopia's 1998, which at the time of the study in October had finished just a month before. For ease of comprehension for the reader all dates will be given in the Gregorian calendar and the New Year will be considered the 1st January. Therefore this year will be 2006, last year 2005 etc... However the reader should appreciate that a general discussion about 'this year' does not strictly refer to any date since September 11th 2006.

asking potentially leading ‘hazard’ questions. In discussing the use of the timeline tool with the team it was felt that asking a question such as ‘what hazards did you encounter this year?’ was very likely to produce natural hazard answers such as shortage of rain or frost and snow. Although these may have been relevant it was felt that they may not have been the most serious hazards that the community and individuals faced that year and therefore using words such as problems, difficulties and challenges were considered to be more appropriate than hazard or disaster, to enable people to freely express their most serious concerns without being prompted in any particular direction.

A number of other participatory tools were considered for use in the FGD’s such as seasonal calendars, social and resource mapping and well being ranking but these had all been used by Concern in either their livelihood analysis (Concern 2006) or feasibility study (Concern 2006a) and were therefore considered to be an unnecessary repetition.

Limitations of the research methodology

The focus of the research was to learn about the people’s views, opinions and experience of hazards and their vulnerability to them which in turn will help to shed light on what DRR means to the poor rural community of Dessie Zuria. However a wider political, economic, social, environmental and institutional analysis is required to provide a far more complete understanding of the hazards and vulnerability to them.

Although the selected four Kebele’s give a reasonable representation of Dessie Zuria as a whole, due to time constraints part of the criteria was based on access and therefore proximity to roads, and therefore excluded the four Kebele’s that do not have a road that passes within their boundary.³ This was negated as much as possible through the transect walks, attempting to get as far away from the road as possible, but only in one Kebele, Dajolie, did we actually have to walk to get to where we were staying and conducting the FGD’s. However in each Kebele we did stay near to the geographical centre so that most participants of the FGD’s did not have too far to walk to attend and all the interviews took place where suited the interviewees, usually at their homes.

Despite asking for a good proportion of the FGD attendees to be from the poorest households this often did not materialize and therefore is one reason why the poorest were specifically targeted for interviews rather than randomly selecting households as was also considered.

For both FGD’s and SSI’s experience made the team better and certain modifications were made in the FGD format as explained above. Also come the second week the other team members were far more confident and willing to do interviews on their own, which facilitated more information gathering and reduced the inevitably stilted nature of SSI’s being translated whilst being conducted. Both these factors mean that the information gathered for Asgori and Dajolie is probably of a higher quality than Adey and Gelsha and easier to analyse, and therefore they feature a little more in the findings and analysis section. Also the modified differences in the second half of the FGD structure for Asgori and Dajolie make comparison between all four Kebele’s a little more difficult.

A final limitation is the fact that children were not consulted either in groups or as individuals due to time constraints and lack of available skills at facilitating discussions with children.

³ Four out of the 11 Kebele’s in which Concern is planning a programme do not have road access, there are more than that if the Woreda is taken as a whole.

Research Findings and Analysis

In establishing what DRR means for a poor rural community in Ethiopia this section identifies the hazards and problems the four Kebele's face, their potential to be damaged considered, and the complex interlinking of them assessed.

Underpinning the analysis throughout this section are two fundamental questions. First, how can a DRR approach help to protect households' capital assets⁴ and therefore improve their livelihood security? Second how can the community mitigate against current and possible future hazards, and prepare for disasters if they do arise?

The information and analysis draws almost exclusively upon the information gathered from the field research and links those findings to the DRR theory outlined, issues raised and outstanding questions identified in chapter two.

Rain and Drought

It was quite clear that rain is critical for the livelihood of the vast majority of the population and arose far more than any other topic of conversation. Rain poses four major hazards to the communities; first that there is none and therefore a drought; second that the rain does not start at the right time, which is January for the Belg season and May for the Meher season; third that there is very heavy rain causing soil erosion and flooding; and fourth, that once the first rains come there is not consistent rain that follows ensuring that the crops grow well.

Every group identified 1999 as the worst year, or equal worst in the case of Dajolie women, out of the last 10. This was because of drought as there was no rain from August 1998 to July 1999, resulting in no Belg or Meher production at all. Initially only the poorest households received food relief but as many others were forced to migrate to urban areas in order, to survive the government extended this support to all households and encouraged those that migrated to return to their homes, which many did. Even the better off with many assets were said to be completely reliable on external help after six months. Adey leaders equated 1999 to the terrible famine of 1985 that got so much press coverage in the West and initiated Live Aid, and Dajolie leaders said it was worse than 1985.⁵

Drought, as evidenced above, was identified, as the potentially most damaging hazard of all but erratic rain was certainly the most frequent hazard affecting all the Kebele's. In Asgori and Dajoile every group except Dajolie women's and youth, either ranked erratic rain as their most serious problem or as in the case of Asgori youth and Dajolie men considered it their biggest problem but because they felt there was nothing they could do about it they ranked it lower or not at all. Every group, without exception, when talking about any year be it good, bad or average all mentioned the quality of the rain and its subsequent impact on the quality of crop production as the most important or equal most important factor in determining how that year would be ranked.

Vulnerability to rain and drought

Having established that drought and erratic rain are potentially the most serious hazards identified by the four Kebele's in Dessie Zuria it is important to understand why the

⁴ See Chapter 2 that concludes that DRR, within the livelihoods framework, can be understood as way of protecting capital assets.

⁵ They qualified this though by pointing out that relative to other Kebele's in Dessie Zuria they were considerably less affected in 1985 as they did have some rain.

population is vulnerable to them. To do this one has to consider the issues of topography and land and population size. Only having done this can we come to an understanding of what DRR might mean to this poor rural community of Ethiopia in relation to these their largest problems.

Dessie Zuria is a highly populated area compared to national averages. According to the Woreda Office of Agriculture and Rural Development (WOARD), the population density of Dessie Zuria is 149 people per square kilometre as compared to a national average of 64 people per square kilometre (Concern, 2006). With a lack of diversified livelihood options either available or employed by the people, as will be seen later, this population density puts quite a stress on the land. About 40% of the land is cultivated for rain-fed crops, 3% for irrigated crops, 23% covered in eucalyptus plantations, 11 % for grazing, 17 % as wasteland used for nothing and only 6% is left uncultivated (Concern, 2006). It would not be evident however, from walking around that 23% of the land was not used, being either wasteland or uncultivated as virtually all the land seen was being deployed for something, either growing Meher crops, ploughed in preparation for the Belg season, being used for grazing or growing fodder and for tree plantations.

Regarding topography all four of the Kebele's are considered as Higher Highland and having visited them it is clear that much of the land in Adey, Asgori and Dajolie is mainly steep or at least on slopes and very rocky whereas Gelsha has a far more gentle topography and would be considered by Concern to be highland more than higher highland.⁶

Bearing these facts in mind we can consider the information gathered from the community. A number of people and groups highlighted that in the past the land was more fertile, the rain more consistent and that the population was lower. The combination of these factors meant that households had larger land holdings, generally had sufficient production to feed themselves and were therefore able to rotate their land enabling part of it to be left fallow, ensuring increased soil fertility. Now however the practice of fallowing has all but gone, with the leaders in Dajolie and the men in Adey making a great deal of this in their discussions.

The last land distribution carried out by the Derg regime in 1991 meant that, depending on someone's household size at the time, each household was allocated between 0.5 and 1.5 hectares of land and therefore for many was a considerable reduction in landholding size.⁷ These small plots combined with an ever-increasing population size means that the quantity of food produced by each household, assuming favourable conditions, is small and therefore necessitates them to cultivate all their land every year. This is further compounded by rainfall patterns as erratic rain can force people to cultivate twice a year because, if erratic rain results in an insufficient Belg harvest then households, to ensure they have enough food for their own consumption, are obliged to plough and plant immediately in preparation for the Meher season. This was very evident in 2006. In Adey, Asgori and Dajolie all the groups and individuals mentioned that the Belg season had been poor because the rain did not start until March, rather than January. Therefore their Belg production was bad and many were forced to replant for the current Meher growing season. When walking around those areas, particularly on higher land this was very noticeable as large areas were in crop, very little of which, worryingly for the people, looked to be promising a decent harvest.

However the interconnectedness does not stop there. Not only is the soil becoming less fertile due to enforced over cultivation but also a combination of rain and topography are helping to yet further reduce the fertility. As much of the land is on slopes, many of them steep, rain, especially heavy downpours, causes soil erosion by washing away the topsoil. Although there are some Eucalyptus plantations, these are generally small in number and size and not nearly

⁶ Conversation with Concern Wollo's Programme Coordinator, 02/10/06.

⁷ Conversely there were some for whom this was an increase in landholding size.

enough to help reduce this run off erosion and everyone agreed for Adey, Asgori and Dajolie that there had never been many trees in their lifetimes.⁸ The lack of trees also means that there is serious shortage of firewood forcing everyone to use dung for fuel rather than as a natural fertilizer to help maintain soil fertility. This was not raised as a major issue but it is clear to see from visiting houses that everyone is reliant on dung for fuel and that at best it is only used on small vegetable patches for its fertilizing benefits.

Although heavy rain was rarely mentioned as a hazard in its own right by groups or individuals there was plenty of visual evidence to suggest that it is not uncommon. Each Kebele had a number of eroded gullies running through them, most noticeable in Dajolie, and least in Gelsha, and whenever local people were asked what had caused this erosion heavy rain was always cited. A storm in August 2006 was particularly damaging causing many of the gullies to increase dramatically in size, thereby creating some landslides and resulting in landholdings next to the river or stream being reduced in size.

For landholders all these factors mean that, even if one ignores the threat of drought, getting a sufficient harvest has become more challenging over the years. This was clearly stated by all groups including those that felt overall, life had changed for the better, such as the men in Dajolie. However, as the research demonstrates male landholders are generally the least vulnerable to these hazards and the situation is even more serious for female, elderly, disabled and youth headed households. The youth are generally landless or in the case of males, are given very small plots of land, such as 0.25 hectares, by their families when they marry. Female, elderly and disabled headed households, that were older than 30, and therefore not considered a youth, usually had some land but due to not being physically able, or in the case of women culturally able, to plough the land they would be obliged to participate in the very common practice of sharing their land with someone that is able to plough. The most frequent arrangement is that a better off household ploughs the land with their own oxen and in return receives half the production.⁹ Therefore for these households not only do they have to struggle with the combined effects of small landholdings, that are becoming ever less fertile, and erratic rain, but they only get half the harvested crop for their own consumption and are therefore forced even more than others to try and produce twice a year rendering their land even less fertile.

Youth without land do not directly face these problems but all the youth FGD's made it clear that the quality of their lives was almost invariably linked with the quality of the production within their Kebele. A good harvest means that they are able to sell their labour to those needing assistance in their agricultural work. If the production is poor there is less work to be done and people are less likely to be willing to pay for help. There were only two years this did not hold to be true; 2000 in Adey and 2004 in Asgori, when there were road-building projects in which the youth, both male and female, were widely able to participate and earn a reasonable wage.

The impacts of lacking land or the ability to work it, does not stop at the loss of crop production but also greatly hinders their ability to own, rear and fatten livestock. After erratic rain, livestock was the second most talked about subject amongst all the men's and leaders groups and widely talked about during the youth and women's FGD's. Livestock are critical for surviving in Dessie Zuria as they facilitate ploughing the land, are the most common form of income generation, and selling livestock is considered the most important coping mechanism during periods of stress. With no or little land it is very hard to keep livestock, as households cannot afford to set aside an area for grazing or for growing fodder to help ensure that livestock remain healthy. This means that their opportunities for generating income with

⁸ A 96 year old man that was interviewed concurred with this saying that when he was young there were no trees in Adey and that Eucalyptus have been introduced into the Kebele during his life.

⁹ Other less frequent variations include paying for ploughing with animal fodder or cash.

which they can buy essential household items such as soap or even grain to supplement their production are reduced and they are less able to withstand major shocks such as drought as they cannot sell their livestock and use the income to purchase food. All groups highlighted that amongst the most vulnerable during the bad years were those without livestock, who, as established from the interviews, are almost invariably the youth, female, elderly and disabled headed households.

So what does DRR mean for this poor rural community based on the various rain, land and population hazards identified above, vulnerability to them and the rather complex interlinking of them? A cursory analysis could conclude that in order to mitigate the ever-dwindling soil fertility and erratic rain, that efforts to improve soil fertility and agricultural production should be the focus. Water harvesting structures could be built, irrigation schemes implemented, terraces¹⁰ and check dams constructed, fertilizer use promoted, agricultural seed and methods technology investigated, trees planted and fuel efficient stoves widely introduced. In terms of disaster preparedness grain stores with buffer stock could be started, and welfare programmes be scaled up such as the governments safety net programme that runs every year from January to June.¹¹ All this is entirely relevant and, to varying degrees, would probably have a positive effect in reducing disaster risk for the community. Indeed Holmen (2006) argues that if the chronic food security issues in sub-Saharan Africa are to be reduced then production does need to be increased and technology embraced but whilst still focusing on the benefits of improving food distribution and indigenous farming practices. Much of this analysis would be 'classic' DRR of the 1980's and 1990's considering infrastructure and technology as the best ways to reduce risk (see Chapter 2). However this narrow interpretation of DRR is probably only going to be of relative short term benefit and at best only help the relatively better off by resisting their potential slide into poverty due to ever increasing vulnerability to recurring hazards. The poor and destitute however would be unlikely to benefit because, for example, they usually live on marginal land and far away from possible irrigation places and therefore at best will remain dependent on external welfare support and extremely vulnerable to future hazards.

As many of the hazards identified are gradual and incremental - rising population, deteriorating soil fertility, ever more erratic rainfall patterns etc... - a more long-term understanding of DRR is required if disaster risk is to be substantially reduced in the long-term and the community as a whole is going to benefit. Although agricultural support can clearly benefit some members of the community it seems clear that agriculture is failing to provide for the population of Dessie Zuria now, let alone in the future, even with the interventions as outlined above implemented. Every year in the last ten there has been a safety net programme supporting at least the poorest members of the community. As has been seen in chapter two a hazard becomes a disaster when the capacity of people to cope is overwhelmed and therefore, it is possible to conclude that there are some members who are suffering a virtually permanent disaster year on year. Even more telling is the fact that every poor household we interviewed, that was eligible to participate, indicated that their income from the safety net programme was a fundamental part of their livelihood and much more than just a coping strategy.

¹⁰ In Adey only one small area of land that had been terraced had a notably better crop than non-terraced land. Also there is some resistance to terracing as the stonewalls made are good places for rats to live, who also damage the crops.

¹¹ The safety net programme entails doing manual work for either food or cash and generally is working on projects that should benefit the community as well e.g. building water harvesting structures and terraces, road building, constructing a health post etc... The elderly and disabled are not included as they are not able to carry out the work and in theory there is no quota for those without land which therefore disproportionately affects the youth, but they often participate on behalf of one of their parents.

If agriculture cannot support the community now then FewNet (2005) gives strong indications that the situation is only going to get worse. The report highlights an emerging consensus that rising sea surface temperatures in the Indian Ocean are affecting rainfall, causing more precipitation over the ocean itself but, importantly for this study, less rainfall in Ethiopia particularly during the Belg season. Furthermore they cite demographic predictions that Ethiopia's population is due to double in less than 25 years. Devereux (2004) concurs, highlighting predictions that rain will decrease in tropical and subtropical areas resulting in further agricultural output reductions. Conversely global warming is expected to increase agricultural output in temperate zones resulting in the possible situation where countries like Ethiopia will become increasingly reliant on food produced in developing countries. Considering the facts that the land available for cultivation is not going to increase; that the four Kebele's are all primarily Belg producing areas with the Meher used only as a back up in case of poor production; and that Dessie Zuria's population density is considerably above the national average, these are alarming predictions with potentially very severe consequences for the Woreda.

If the poorest are unable to cope every year now, how many people will be unable to cope in 25 years time if the population has doubled and rainfall has reduced and become more sporadic? What will be the economic cost of having to provide safety net support year on year to all those who are unable to support themselves? Would Ethiopia be able to afford this massive rise in regular welfare expenditure, not forgetting that severe drought has for a long time been a frequent threat? It is highly likely that the answer to this last question would be a resounding no. As part of determining vulnerability is the ability to predict hazards as seen in Chapter two, it would seem that for DRR to have any meaning and significance for the population of Dessie Zuria, thorough analysis of meteorological, and demographic predictions needs to be completed for at least the Amhara region and preferably South Wollo zone to give as accurate a picture as possible of what life could potentially be like in the years to come. Answers and research to possible economic implications need also to be analysed so the GoE, donors and other stakeholders interested in the sustainable development of Ethiopia can support in an appropriate manner. With these best estimates longer-term mitigation and preparedness plans can be developed in order to assist the communities and relevant and applicable national and regional policies put in place. Part of this process, without wanting to act as a scaremonger, should consider familiarising the community with reasoned and understandable explanations of how the environment might change and therefore allow them to discuss and consider how this is going to impact their lives, what steps they feel they need to take as a community and households and essentially giving the advantage of knowing these predictions thereby helping to reduce their vulnerability to these climate change related hazards.

Faced with this myriad of problems calling into doubt the sustainability of agriculture as a viable livelihood option for much of the population of Dessie Zuria how can a DRR approach help to protect households' capital assets and improve their livelihood security and how can the community mitigate these climate change related hazards? Information obtained from the community can greatly help us to answer these questions but just before doing that it is important for us to consider climate change adaptation thinking. As there seemed to be no Climate Change awareness amongst the people of Dessie Zuria, and very little amongst many of the Conern staff based in Wollo, they therefore lack the knowledge to be able to consider climate change adaptation as a plausible focus for mitigating against and preparing for likely meteorological changes. For DRR to have any meaning for Dessie Zuria in answering these questions, it needs to encompass climate change adaptation's thought and processes and more long-term focus. Detailed analysis of meteorological predictions are likely to lead to a conclusion that climate change is perhaps the principal overarching hazard that faces Dessie Zuria now and in the future and that traditional mitigation practices as outlined above, will be akin to closing the gate after the horse has bolted. Adaptation therefore must seriously be

considered as the way to mitigate the potential impacts of the overarching hazard that is climate change. (Reference theory section with debate re: whether adaptation and DRR thought are interlinked or have so far worked against each other rather than being mutually beneficial). Perhaps should be that GoE and others need to take climate change seriously in order to get more support for mitigation and reducing vulnerability. Schipper actually says that Disaster risk management has advantage of a broad focus rather than the narrow confines of the legally binding UNFCCC that represents mainstream adaptation thinking and action (Schipper, 2006).

Also there are in theory National adaptation plans of action, couldn't find an effort Ethiopia (Thomalla et al. 2006). Maybe more important here that DRR incorporates the longer-term perspective of Climate Change whilst maintaining its own strengths of a broad outlook and local and national focus to ensure that adaptive response are investigated and acted upon in the short and long term.

Diversification enabling livelihood security

Adaptation aside, what the people themselves believe can make a positive contribution to ensure livelihood security offers valuable insights. As was highlighted at the start of this chapter Dessie Zuria is very much dependent on rain fed agriculture but from the FGD's and SSI's it is also clear that agriculture is the livelihood option of choice for the vast majority of the population. The few individuals that we met with other skills, primarily carpenters, that learnt their trade when forced to migrate during a difficult period, all referred to agriculture as their primary livelihood option and that carpentry was a fall back when times were difficult or at most as a supplementary option. Even the youth who represent the largest proportion of the population that is landless and therefore least able to participate in agriculture stated a preference to make their living in their Kebele selling their labour for agricultural activities.

Despite this preference, there is however a definite appreciation amongst most of those we spoke to, especially the women and youth groups, that they need other livelihood options. Every group identified the need for skills training in areas such as carpentry, metalwork, sewing, pottery and sifiet making,¹² as potential ways of improving livelihood security and lack of job opportunities was often mentioned by the youth as one of their major problems. The men's and leader's groups identified the need for skills training but tended to spend longer explaining how, if only they had good rain, their lives would be better, before thinking more laterally.

As Ellis (2005) points out risk is reduced by diversifying livelihoods which can be done to a limited extent in-situ but a collapse in harvest will result in a collapse in related activities such as threshing or processing. Therefore for risk reduction to be more effective diversification has to happen across different sectors that have different risks associated with them. Generally the higher the level and more the diverse the assets owned by a household the greater their capacity to manage risk, cope with hazards and therefore be less vulnerable. This line of reasoning can easily be applied to the example of landless youth in Dessie Zuria.

Despite most of them being landless, youth, as mentioned above, expressed a preference for making their living in the Kebele, by doing daily labour work on agricultural related activities. These they supplement with work on construction projects if there is a demand for their labour and some, if they can access capital, by petty trading. However they are very aware that this strategy is almost entirely dependent on the quality of the weather and therefore if the farmers have a poor season the youth almost invariably do as well. This

¹² Sifiet is a generic term for kitchen items made from straw or grass, such as 'Moussa' a large bowl that is used to store injera, the national staple food.

livelihood strategy therefore cannot really be considered as sustainable and, even if some think that it is at the moment, this surely cannot last. They are not likely to get land until their parents die and as the vast majority of families have many children there is not realistically going to be sufficient land to share amongst them unless the average one hectare plot is reduced to three or four plots of less than 0.3 hectares¹³. This, combined with climate change and potential rise in population, means that the opportunities within agricultural related work in their Kebele are going to become very scarce, very soon. Therefore to become less vulnerable they are going to have to diversify into other activities and if they do not wish to be forced to adopt very risky livelihood strategies, like a female youth in Asgori that sells alcohol and sex, they need to acquire new skills. Also in all likelihood many will have to consider migration in order to ensure spatial spreading of their risk as within Dessie Zuria virtually all activities are related to the success or otherwise of agriculture.

The youth clearly need support to help them diversify to reduce their vulnerability to hazards but based on the research findings I would argue that women also need similar support so that they can help contribute to reducing their households' vulnerability and in order to give them some independence from their husbands. Apart from one or two exceptions, the most any married woman could hope for was to have responsibility for poultry and household items, such as cooking equipment. Although many women claimed that they discussed financial issues, such as buying and selling of livestock with their husbands, invariably it is the men that have the final decision and actually go to the market to sell and purchase and therefore effectively have total control over the household's cash and resources. Therefore the livelihood security of women, their children and other dependents, rests almost entirely in the capability of their husband, which apart from being morally deplorable, logically is about 50% more likely to fail, as 50% of the adult population are unable to express their opinion or follow strategies that they believe may reduce their risk.

Aside from the obvious need for diversification and the communities request for assistance to do so, a look at the livelihoods of those households that feel they have livelihood security offers further evidence that diversification is an important factor in reducing risk and mitigating hazards. The women's association leader in Dajolie is a good example. She is well educated, having got to grade nine, does petty trading of foodstuffs, kerosene and clothes¹⁴, grows a variety of vegetables and has chickens, therefore allowing her to sell eggs. Her husband aside from farming is also a carpenter and is able to earn in the region of 300 birr per house.¹⁵ A youth in Gelsha, although only a farmer himself felt that their household was secure because his brother had migrated to Dessie and got a good job in the automobile industry and therefore provided regular support to the family. The owner of the house we stayed in in Asgori also felt they were secure and in encouraging her son to go back to school and not worry about his wish to be a farmer declared that 'agricultural activities are not even that important to us'. They make and sell alcohol every Thursday and Friday,¹⁶ have many livestock, which they rear and fatten for trading, do poultry production and sell vegetables. In Adey a participant in the men's group that was a carpenter felt that he was fortunate because when agriculture became difficult he was able to earn sufficient money to support his family through the application of his skill and therefore considered his household to be secure.

¹³ A plot this size, even in a great year for production is not going to produce nearly enough food for on person for a year, let alone an average household of five.

¹⁴ At the time of researching she had stopped trading in clothes

¹⁵ This is a good income, which could purchase 3 rams or enough food for several months.

¹⁶ Unlike their female youth neighbour, this woman was not forced to sell sex as well, as she was married and they had a wide range of income generating activities that not only provided the initial capital to start alcohol brewing and selling but also allowed her to do it in large quantities to ensure a good return.

These fairly rare examples demonstrate the benefit of diversification in reducing risk but they are still very much linked with agriculture and its associated risks, notably erratic rain. For example the youth in Gelsha, with the brother that works in the automobile industry, is likely to become far more vulnerable if the brother was to become ill and no longer able to work because then his household is once again entirely dependent on agriculture for income. Even the carpenter by staying in Dessie Zuria is dependent on agriculture because when times are difficult people are not going to be willing to spend any cash reserves on paying for carpentry work. Therefore it is clear that there is still a great deal that needs to be done in terms of diversification even for the better off.

The other important feature to these examples is that they are all landholders and therefore their other activities although related to agriculture have enabled their risk to be spread somewhat. However for the landless, the option of growing crops and rearing livestock does not exist and therefore their focus has to be entirely on other skills with which to earn a reliable income. Although there are a number of markets in the Kebele, they are primarily based around food and livestock selling and some trades people, who seem, from visiting to do a roaring trade, such as blacksmiths. There would certainly be a market for more people to buy and sell food and if they have the skill offer a service to those at the market such as metalwork. However the market is only so large and would not cater for everyone that could potentially be trained and therefore it seems that migration needs to be at least considered as a viable option in diversifying and it is to this that we now turn.

Migration

Ellis (2005) continuing his arguments about reducing vulnerability, argues that migration, both rural to rural and rural to urban, should be considered as positive for livelihood diversification as it helps to spread risk spatially, due to differing locations and across activities and therefore changing the nature of the risk profile for the household concerned. Generally, he argues, moving out of poverty is a cumulative process achieved in tiny increments such as upgrading from chickens to goats, goats to cattle etc... and even a small amount of money gained from remittances as a result of migration, can greatly help in achieving these small steps.

However the people of Dessie Zuria overwhelmingly understand migration to be negative something that is done to “survive the difficult time” as many commented. Some individuals pointed out that they had benefited from migration by learning a skill such as carpentry and others were identified as having found a good life when away and have not returned since to live in the Kebele. However these are few and far between and generally migration is associated with being one of the poorest of the poor, living on paltry wages, being exposed to the risk of HIV/AIDS if you were a woman¹⁷ as you might be forced to sleep with an employer, and death through being unable to meet basic needs. The government is also very keen to ensure that people do not migrate, especially to urban areas. During 1999, the widely agreed worst year out of the last 10 due to drought, many people were forced to migrate which resulted in the government expanding its relief programme to all households in the Kebele and declaring that people would receive food aid if they returned to their homes. Only three people, two youths in Gelsha and a man in Dajolie, considered that migration could be a positive influence on their lives because it offered the possibility of having different livelihood options, although one qualified that by saying that this was the case only if he managed to get good results at secondary school.

¹⁷ It was always men that identified this risk on behalf of the women and never was it mentioned that men that migrated are more exposed to HIV/AIDS.

It is important to consider these opinions and experiences, as no one knows their situation better than the people themselves. However, much of the discussion around migration during FGD's was hearsay, what people had heard from those that did migrate but actually very few of the FGD's and SSI's included people that have migrated in the last few years. There were a reasonable number that migrated in 1999, a very bad year that affected everyone, but still a minority compared to those that did not. As was pointed out when we asked why no one that migrates was present the groups explained that those that are forced to migrate are away at the moment and therefore not available to participate. Therefore in using a DRR approach and hoping to establish its meaning for Dessie Zuria it is important to learn more about migration from those that do or have frequently in the past. Why they migrate? Where to? What do they do? Are they able to send money home? How long do they stay away? What risks are they exposed to? These are all questions that need to be asked in, for example, the towns of Combolcha and Dessie, both not far from the Woreda¹⁸ and frequently mentioned as popular migration destinations.

This sort of research is important for three reasons. Firstly, as migration is very much a coping strategy, the most vulnerable to hazards in the Kebele are the most likely to have migrated and they are the people that a DRR approach must most look to support. Secondly, it should lead to a greater understanding of the opportunities available that could be explored to bring about change and also further risks that people are exposed to, so that mitigation against those risks and vulnerability to them can be reduced. Thirdly, following from Ellis' arguments, migration and the potential remittances earned from it are needed to help households spread risk and increase their livelihood security and therefore support given to those that have migrated may be as good a way as any to help reduce vulnerability in Dessie Zuria.

As discussed thus far, erratic rain and soil degradation compounded by population rise are potentially the most damaging hazards that the community faces and adaptation, diversification and, potentially, migration have been suggested as ways of reducing the risk they pose to the community. As these have yet to be embraced in any serious way it is urgent that this commences in the very near future. However focus cannot rest entirely on these issues as the community clearly identified other very serious problems, notably concerning health and education that they consider warranted urgent attention. Within the discussion that follows we will look at these human development problems, try to understand the risk they pose and analyse how best these risks can be reduced. It will be evident that some progress has already been made in mitigating these problems and reveal existing strengths, capacities and interventions on which continued and future risk reduction can be built not only in the areas of health and education but also as a vital component in reducing vulnerability to the climate change related hazards discussed so far and help to bring about livelihood security.

Human capacities on which to build future disaster proof development?

After erratic rain, every group prioritised human development concerns of health, including access to clean drinking water, and education as their next major problems and considered these to be more serious than other natural hazards common to the area such as, frost and snow, wind, crop pest and livestock disease.¹⁹ Another problem that was mentioned regularly but not by all groups was that of rising prices for essential household goods such as soap, salt,

¹⁸ Concern's office is in Combolcha and is only 45 minutes by car to Dessie. Gelsha, the nearest to Dessie, takes one hour by car to travel there and for Asgori, the furthest, it takes no more than two hours.

¹⁹ Every group mentioned most of these and there is no doubt that they do affect crop production and livestock well being. However at community level their impact was considered relatively small but for some individuals their consequences have been very serious.

sugar, grain and for the better off, coffee. Their main health concerns were the lack of clean drinking water due to unprotected springs and the absence of a functioning health service. Both Asgori and Dajolie recently had health posts built in their Kebele but neither has any staff or medicines and in Dajolie there is just the building.²⁰

Regarding education the main concern was upgrading of the schools to be able to teach to a higher grade. Adey, Asgori, and Dajolie all finish at grade four, which is the end of primary school level but anyone that wishes to have further education needs to travel long distances which is expensive and may also mean having to live away from home resulting in having to pay rent. Gelsha has recently had its school upgraded from grade six to eight which was a welcome development but youth there felt that if they were to have a chance of getting a good job away from the area grade 10 is the minimum requirement and therefore they would still be required to do two years study in Dessie which is very expensive. The other issue concerning education was the overall cost for uniform, fees, books and pens that, on average, according to interviewees, is 100 birr per year per child, a considerable sum for the poor.

From a DRR perspective these are significant findings. Health and education service provision being cited as the major problems after erratic rain indicate that these are important factors in making people vulnerable to the hazards that impinge on their livelihood security. Therefore although health and education were mentioned as part of their problems it seems logical to conclude that, if these areas can be addressed and improved then they can very much be part of the solution in reducing the vulnerability of the population.

Encouragingly the community highlighted improvements that have already been made under the broad umbrellas of health and education, which give us an indication of areas of strength and capacity that can be built on to improve mitigation and preparedness and reduce vulnerability. (Link with Anderson 1998 who highlights the importance of building on existing capacities when looking to assist in future development, as outlined in their vulnerabilities and capacities analysis) These advances are almost entirely due to informal education and support in diversifying their livelihoods and have occurred within the last two years. The most frequently mentioned were; training on gender awareness and rights; extension education on health, sanitation, vaccination, contraception and HIV/AIDS; agricultural extension support and training for vegetable, tree and fodder growing; and greater access to credit. In Gelsha for example some have benefited by having a water harvesting structure built near their land to be used for irrigating small plantations of trees or vegetables and received training on vegetable production and free seed from the MoA extension worker. The groups in Adey explained how the health extension worker had been giving training this year on family planning, improved sanitation in houses, the need for latrine construction, the benefits of boiling water to reduce prevalence of water borne diseases and strongly promoting children's vaccination which has now reached 95% coverage. In Asgori quite a lot was made of Concern's livestock credit programme that gave three ewes to each of the participants and targeted poor women and in Dajolie the groups highlighted that there is now a greater awareness of contraception and an improving awareness of HIV through the establishment of an HIV club. The leaders said that 45 people in Dajolie had had hysterectomies and there appeared to be fairly wide knowledge and use of the pill and tri-monthly injection throughout all the Kebele's.

Leaving gender awareness aside, as it will be discussed later, these advances in knowledge and awareness appeared to be a source of encouragement for the communities who talked about them with enthusiasm and eagerness to learn more²¹ and have coincided with both the women's and youth associations becoming active within the last year. From a DRR

²⁰ We stayed in the Dajolie health post and therefore saw this for ourselves, there wasn't even a chair.

²¹ The women's FGD in Dajolie even asked Yeshe, the female facilitator, to stay and pass on any health and sanitation information she might know so that they could learn more.

perspective these are positive developments as increased knowledge in these areas can only help to reduce people's vulnerability to hazards. However it is also clear that there is a lot more than can be done as it is evident that many people have not yet benefited and that the gains in knowledge are still not widespread as the following examples demonstrate.

Despite Gelsha having by far the most water harvesting structures and vegetable production out of the four Kebele's, a female-headed household which we visited, which was considered one of the poorest in her Got, had planted cabbage this year but the production was bad and she had no idea why and had received no training. In Asgori a female youth who divorced her husband two years ago and tragically has had to resort to selling alcohol and sex to survive, was well aware of contraception but despite expressing a fear of HIV/AIDS had not gone to receive free condoms that are available from the health post in Asgori or the clinic in Chirecha, their nearest market. This would indicate a very limited understanding of how HIV is transmitted.²² In Adey, despite training given on the benefits of boiling water, the women's FGD felt that take up was still very limited even though the health extension worker identified water borne diseases as the most common ailments within the Kebele.²³ Finally, in Dajolie, the women, although pleased with the advances in general health knowledge, also expressed frustration at the extension support being so sporadic resulting in many people not receiving or forgetting the advice given.

Each Kebele also pointed out that although the availability of credit had greatly increased it was not available to those that would possibly benefit the most, women and youth, as they do not own land and therefore are therefore considered too high risk for the lender. Also many women expressed fears of taking out a loan because they were concerned that they would not be able to repay it due to their lack of education and therefore self perceived inability to be productive. This fear has diminished a bit in 2006 as some women saw that others had been successful in using credit and decided to try themselves and also because Concern had deliberately targeted women for its livestock credit programme, which was considered a success.²⁴

As these examples illustrate it is the poorer and more marginalised members of the community that have not benefited from these advances in extension training, awareness and credit, and yet they are the people that most need this support in order for them to be able to mitigate against hazards and be better prepared for disaster. From the FGD's and SSI's those that talked about having received training, support and credit were able to do so confidently and were comfortable in expressing their opinions. In contrast those that had clearly not received training and support or did not talk about having done so were invariably poorer and less educated. Based on this it would seem logical to conclude that the overwhelming majority of people who have benefited from these developments were those that were already better off and better educated and therefore were able to make time to attend meetings and had the knowledge to realise that it was important for their livelihood to do so. There is little doubt that this is helping to reduce their vulnerability but there is also little doubt that the most vulnerable are not being assisted in this way. If a DRR approach is to have meaning for this community, continued extension support, group training, household visits and availability

²² It is possible that she has not collected condoms due to embarrassment over her income generating activities, but Yeshe who interviewed her felt that it was more a case of lack of knowledge.

Furthermore on the day before the interview she freely and uninvited told Mesafint, the translator, about her alcohol and sex selling and therefore it would seem that fear to ask for condoms is unlikely.

²³ It is possible that lack of fuel is a contributing factor to low uptake on boiling water.

²⁴ It is plausible that this expressed satisfaction with Concern's credit programme is a case of saying what they think the facilitator wishes to hear but it was mentioned that this was the first time that women had been specifically targeted for participation which was the main reason for satisfaction with the project.

of credit at reasonable rates of interest must continue and deliberately target the most vulnerable and poorest members of the community.

The prioritising of human development concerns above natural hazards is very interesting as it indicates that for Dessie Zuria at least a DRR approach has to be broader than just focusing on natural hazard disaster risk reduction as so many academic journals and articles have done in recent years as highlighted in Chapter two. DRR should be a broad approach encompassing both man-made, including conflict, and natural hazards and appreciating the fact that very often there is a complex interlinking of the two. Also it offers encouragement for Concern to embark upon their intended forthcoming scoping papers to look at the possible contribution of DRR approaches in the sectors of education and microfinance and that based on these findings they should also consider health. (link with theory) This also vindicates the team's decision to deliberately avoid the words hazard and disaster in questions as when less leading words were used the findings clearly indicate that apart from erratic rain, natural hazards are not the most potentially damaging and that people are in fact more vulnerable to institutional failings in Dessie Zuria which in turn create further vulnerability. There is perhaps a lesson here for NGO's such as Concern in that within their DRR approach understanding of vulnerability is perhaps too much aligned to location and exposure to natural hazards, e.g. living on a flood plain and therefore reduces the scope for utilising and making sense of a DRR approach in many settings where, like Ethiopia, disasters do not strike at the whim of nature but are embedded in Ethiopia's ecological, economic, political and social systems (Lautze, 2003).

Gender

For all the women's FGD's their recent learning about gender awareness and rights is hugely important to them, to the extent that the Dajolie women ranked 1997 as the equal worst year in the last 10 due to its symbolic representation of all the rights and awareness that they did not have at that time, such as unchecked abuse from their husbands, no understanding of development, and lack of awareness of important issues such as HIV/AIDS. The joint worse year to 1997 was, as every other group decided, 1999 due to the severe drought and complete lack of crops that year. This is very important and they made it clear that they were still not content, as their fourth major problem after talking of health and education was still lack of realisation of their rights outside the home where they felt that they were second-class citizens.

Every women's FGD mentioned that they had received gender awareness and rights training in the last year and in Gelsha three of the participants had received training on how to build fuel efficient stoves so that they could build some for others for income generation and also give training on their benefits in reducing the amount of fuel required for cooking. When the groups were asked about what they talked about in their meetings they all mentioned that they discuss their rights, that their husbands should help them in their work, and that they should have equal responsibility for the households' assets such as farming tools, which were often mentioned in this context.

It was very interesting that in talking about their rights many said that they now considered themselves to have equal rights with men but when this was discussed further their evidence to support these claims was poor. For example in Dajolie women said that now their husbands were less likely to hit them because they felt better able to argue and reason their point of view. In Gelsha one lady talked a lot about her right to be able to lend out agricultural tools, traditionally entirely the responsibility of men, and the rest of the group started laughing at the incredulity of her claims and yet these were the same women that later said that they had equal rights. In Adey they openly stated that all their activities were to support their husband and that he was very much in charge and at one stage when they were encouraging each other

to talk the women's association leader declared that "we can talk a lot as we are on our own" indicating that when they are around men they do not feel so free to talk and express their opinions. Only in Asgori did what they say back up their claims of having equal rights, but seeing that they admitted that only just over a year ago they knew nothing about rights it seems extremely unlikely that they have actually obtained equal rights with men in that short period of time.

This however is not to take away from what appears to be an invaluable start to seeking gender equality. In every group there were three or four women who talked of gender awareness and equality and of having received some form of awareness training. Invariably they were also the most lively participants, who seemed most at ease in expressing their opinions and genuinely animated and enthusiastic about this recent development in their lives. This observation indicates that this training and awareness has had a very positive impact.²⁵ Coinciding with this training has been the establishment of a women's association in each Kebele, in which meetings are held and important issues, such as rights are discussed. Although these are positive advances, information gathered from SSI's with women reveal that the positive impact of the women's association and gender awareness training is not spreading as far as FGD discussion would have led us to believe. All of the poorest women that we spoke to were either not a member of their association, or if they were, did not really understand why it was established, what benefit it provided and, if they did attend meetings, did not understand what was being discussed. One lady in Dajolie sold her last chicken in order to be able to pay the three birr membership fee and this seems, in her case, to have caused far greater vulnerability due to the loss of potential egg sales, that it has in benefits of which she felt there were none.

This is not to say that the women's association is only helping to increase vulnerability, but rather that there is a clear need of support for the groups and their discussion and training activities so that those that could benefit the most, the poor and vulnerable, are able to reap the benefits as well. The fear is that if many remain excluded through not understanding or not joining then the long-term sustainability could prove to be difficult and that only the better educated and relatively better off will continue to benefit. This will mean that the poorer and less educated women would become further marginalised, disadvantaged and more vulnerable.

If this support could be given then it would seem that the women's associations and empowerment of women in general has great potential to reduce vulnerability at both household and Kebele level. All the women's FGD's felt that increased training for women and further participation in all aspects of Kebele life would greatly improve their livelihoods. The enthusiasm expressed by those that had received the gender awareness training, and benefited from projects that deliberately targeted women, such as Concern's livestock credit programme and the fuel efficient stove training in Gelsha, lends evidential weight to their assumptions. Furthermore women also pointed out that if they could get access to credit then they would not only invest in income generating activities such as petty trading²⁶ poultry or vegetable production that could benefit their household but that they would also as a group look at setting up a cooperatively run grinding mills²⁷ or develop springs to improve water quality and safeguard them from potential damage due to flooding or landslides, therefore

²⁵ Another interpretation could be that it was merely coincidence that those that had received gender awareness and rights training were naturally more outspoken, but due to the frequency of this observation the author believes this to be less plausible.

²⁶ Petty trading in Dessie Zuria always involved buying goods at a large market, often Dessie, for a low price and reselling them at a smaller market, usually the nearest to their Kebele for a higher price.

²⁷ Many groups complained that grinding mills had become too expensive.

benefiting the wider community. No men's, or leaders group²⁸ considered or mentioned the possible benefit of working together or pooling their resources in an attempt to improve life in the community. Instead they were far more inclined to say that they expected government support in the hard times and focused on the problems more than thinking about possible ways they could try and help themselves. Based on this evidence it would seem imperative that women's issues, both awareness in rights and deliberately targeting support for activities that women can participate in independently are crucial if a DRR approach is to be helpful to Dessie Zuria. Their apparently more community minded ideas, and enthusiasm and willingness to work in differing sectors are just the sort of capacities that future development, mitigation, and preparedness activities can be built on for future reduction of vulnerability and impact of hazards.

Family Planning and Contraception

A very important issue, especially considering the alarming population estimates from FewNet as discussed earlier, is the need for improved family planning if the community as a whole is going to be able to reduce their vulnerability to climate change and other hazard's and problems and secure livelihood security at household level. As we have seen, part of the awareness training that women have received has concerned family planning and contraception with this being most apparent within Dajolie and Adey. The level of knowledge about contraception for birth control was much higher than we expected throughout the four Kebele's, with the revelation that 45 people in Dajolie had had hysterectomies being particularly astonishing. The women's group in Adey expressed appreciation for the family planning training that they have received from the health extension worker highlighting that it is far easier to keep their children healthy if they are well spread out and fewer in number. The association leader stressed this by telling us that her first three children all died young but now that she is more aware there are three years between her next two children and she firmly believes that knowledge gained on spacing children combined with better vaccination coverage are the reasons for their health today.

However there is evidence that there is still much to be done. The leader of the women's group in Dajolie, although formally and informally well educated has six children, one of whom is an infant. The youth secretary in Asgori, a male, was also well educated and despite only having a very small plot of land has managed to make a good living for himself through diversification, but his wife is pregnant with their fifth child and he readily admitted that this was a great concern for him in the future as he had no land to be able to pass onto his children and was not sure how they were all going to survive. These examples, from better off and well educated people, indicate that there is awareness but perhaps not as much behavioural change as necessary to curb population growth and ensure health and livelihood security at household level. However in contrast to that the Dajolie leaders group very much disagreed with the youth chairman when he suggested lack of behavioural change concerning contraception use was a major problem and therefore opinion is certainly mixed within the community as to whether this is an area that needs pressing attention. However seeing the benefits that awareness raising in general seems to be having on the community and bearing in mind the stress already on the land to produce enough food for the population, there cannot be complacency in this area and continued education concerning family planning, contraception and linked within that HIV/AIDS is surely needed if the risk posed by climate change is to be reduced.

²⁸ Leaders groups were all men except for the leader of the women's association who was always fairly quiet.

Vulnerability effects of multiple hazards

A final important aspect of DRR that we have yet to consider is the combined effect that multiple or recurring hazards can have on the vulnerability of a community and households and how long it takes for people to recover from a disaster as discussed in Chapter two. Lautze, (2003) argues that an important element of trying to estimate future vulnerability in Ethiopia is estimating the impact of previous disasters.

There was scope for this to be addressed in the FGD's when we discussed the trends but the effect of many hazards was not raised as a cause for concern or vulnerability by any of the groups. However it was very evident that the impact of the drought in 1999 was severe indeed as not only were all households reliant on government relief aid but for many groups 2000 and 2001 were the next worse years largely because they were still struggling from the shock of 1999. Opinion was not unanimous on this, as some felt that recovery was quite quick due to continued government support in 2000 but conversely if there had not been extended government support then it would be logical to conclude that the population as a whole would have been very vulnerable to any other hazards that could have occurred at that time. What was widely agreed though was that by 2002 the majority had recovered to at least their former livelihood status following 1999. Bearing in mind that for many this former status was precarious at the best of times this was an alarming period of vulnerability in which they were living for three years.

Although the FGD's did not reveal much of interest in relation to the estimated impact of previous disasters and the accumulative effect of being exposed to a number of hazards the SSI's certainly produced some interesting information to help understand this element of vulnerability. The most common example that arose from the SSI's was that of losing a husband, either through death or divorce, and how the effects of this initial shock can be seen in their increased vulnerability to future hazards which in turn cause greater vulnerability and thereby create a vicious downward spiral of ever increasing vulnerability to even the smallest hazards. A number of women that we spoke to are trapped in this sort of spiral to the extent that they are either on the verge of, or just one more hazard away from, destitution. The following case study of a female youth in Tay Kelad Got Dajolie illustrates this point well and is similar in nature to the situation that a number of female-headed households face at the moment in Dessie Zuria.

Her husband, who was in the military, died two years ago after having being killed during a disagreement with two men over the use of irrigation near his land. This left her and her son, five at the time, more vulnerable as they lost his income from the military and also the ability to plough their land. This vulnerability was further compounded when the Kebele leaders decided to take away all his land from her, one hectare, to avoid potential conflict with her husband's brother who claimed that he should have the land, as it was originally his father's. This meant any money she earned had to be spent on food and school fees and therefore she was not able to afford to carry out repairs on the holes in her roof making them vulnerable to further damage in bad weather. Sure enough a storm with heavy rain in August 2006 resulted in her roof collapsing during the night. This hazard meant that she was now homeless but fortunately her brother-in-law agreed to let them stay in his house, which they have been doing since. Furthermore by no longer having a house she was forced to give her horse to a relative to look after, which means that any income that she could have earned from using it for transporting supplies is now gone, at least temporarily as well.

Now her brother-in-law and his family's willingness to help them is beginning to run out and they keep asking her to start building her house again and leave soon. This she is not able to do as she has no money and no source of income, partly because she feels obliged to work hard in the house as a form of payment to the family for agreeing to put them up and therefore

opportunities to do other activities are reduced. Neighbours and relatives have offered support to help rebuild her house by providing raw material such as eucalyptus wood once she makes a start but she is not able to even make that start.

She does have one source of hope and that is after noticing that her husband's land had not been cultivated for two years she went to the court in Dessie to ask for it to be allocated to her and they decreed that she should be able to have 0.5 hectares. This she planted by paying for the ploughing with animal feed and managed to get 350 kg's this year, but it is not enough to feed her and her son and therefore she has to purchase food as well. She is also hopeful, as there is perhaps the opportunity for her to use irrigation as her land is near to a spring. Despite this hope she readily admitted that the only chance of her being able to rebuild her house, which will cost in the region of 1,000 birr, is if neighbours and relatives give her free support but as everyone suspects that next year is going to be bad due to the current poor nature of the Meher crops this is unlikely.

For this woman, one poor harvest, an illness to her or her son, being asked to leave her brother-in-law's house or any other hazard is going to put them into an extremely difficult situation and probably result in destitution due to an accumulated increase in vulnerability sparked by the death of her husband, poor decision making by the Kebele leaders and the loss of her house. Each of these hazards on their own, although damaging, she probably would have been able to cope with fairly well but the combined effect has left her and her son extremely vulnerable even to the smallest hazard or problems with which other households can quite easily cope. This is a familiar story, many women who lost husbands are facing problems with their roofs that they are not able to repair²⁹ combined with other issues such as loans they are not able to repay due to livestock disease killing three sheep, being forced to adopt very risky livelihood strategies such as selling sex or removing children from school so they can work as servants for better off people and many more.

These examples highlight that a DRR approach in Dessie Zuria has to pay particular attention to the ability of people to recover from disasters, how they have been made more vulnerable and how can that vulnerability can be reduced and that time spent looking at this issue in depth would greatly help the community and external actors trying to support it to work out what might be better ways to recover from disasters and therefore minimising their impact on creating more vulnerability followed by greater livelihood insecurity. This year is a good example of how some have learnt to better prepare themselves for hazards and disasters, lessons learnt from bitter experience. Currently it is fairly clear that the Meher crop is not going to yield a good harvest early next year. As the Belg was generally poor before it most people expect that next year is going to be a difficult one in terms of food security and therefore will likely necessitate stress selling to purchase food. Some in preparation for this, who own livestock, are selling their livestock now whilst there is enough food so that they are able to fetch a fair price for the animals and with that money buy food that is also at a reasonable price and setting that aside for the expected bad times ahead.

Bibliography

Concern, (2006) *Livelihoods Analysis, Dessie Zuria Woreda, of South Wollo Zone of Amhara Region, Ethiopia*, Concern, Addis Ababa

Concern (2006a) *Feasibility Study of a Livelihoods Programme in Dessie Zuria Woreda, South Wollo Zone, Amhara Region, Ethiopia*, Concern, Combolcha

²⁹ In situations where people are unable to afford repairs to their house, a loan or even a grant to facilitate that would probably have just as much risk reduction benefit as any other intervention. Freed of the worry and burden of their house they can then focus all their efforts to resolve other problems they have such as paying off their debts.

Ellis, F & Ade Freeman, A (eds), (2005) *Rural Livelihoods and Poverty Reduction Policies*, Routledge, New York

FewsNet, (2005) 'Recent Drought Tendencies in Ethiopia and Equatorial Sub-Tropical Eastern Africa' in *Vulnerability to Food Insecurity: Factor Identification and Characterization Report*, no. 1

Holmen, H (2006) 'Myths about Agriculture, Obstacles to Solving the African Food Crisis' in *European Journal of Development Research*, vol. 18, no. 3

Lautze, S; Aklilu, Y; Raven-Roberts, A; Young, H; Kebede, G & Leaning, J. (2003) *Risk and Vulnerability in Ethiopia: Learning from the Past, Responding to the Present, Preparing for the Future*, USAID

Devereux, S. & Edwards, J. (2004) 'Climate Change and Food Security', *IDS Bulletin* Vol 35, No. 3, pp 22-30