Ageing and Vulnerability: Evidence-based social protection options for reducing vulnerability amongst older persons

Key questions: in what ways are older persons more vulnerable to a range of hazards than others, and how can an understanding of relative vulnerability inform our practice for social protection for older persons?

Key reference texts:

HelpAge International (Myanmar) (2013) The Situation of Older Persons in Myanmar

Griffiths M (2011) Gender and Age related impact of Disability on Household Economic Vulnerability: analysis from the REVEAL study in Myanmar. Sydney University

Griffiths M (2012) Ageing and Economic Vulnerability: Implications for Poverty Reduction Programmes. Bulletin of the Social Policy & Poverty Research Group 1:3, April 2012

Key points:

Background:

Although detailed census data has not been available since 1983, current projections estimate that older people (aged over 60) account for 9% of the population in Myanmar, and is estimated to rise to 15% of the population by 2015, and to 25% by 2050.[1] Sample data from 5,000 households in the Dry Zone in Myanmar yielded an over-60 population of 8.6%, suggesting that the 9% current estimate is reasonably accurate. Detailed demographic projects of the ageing population can be found in the above-mentioned report. However, key concerns from the demographic surveys are as follows:

- As the ageing population increases, by 2035, persons over 60 will outnumber children aged under 15 for the first time
- This will result in a shift of the dependent population (i.e. population outside working age) from children to older persons, and hence Myanmar will have fewer productive age persons per older person to provide support to older persons

This chapter will explore three key questions:

1) What is the relationship between ageing and vulnerability/poverty?
    a) Are older persons, and households with older persons, more vulnerable than other persons/households?
    b) If so, what types of older persons/older person household are more vulnerable?

[1] HelpAge/UNFPA/MSWRR (2012) The Situation of Older Persons in Myanmar

c) In what ways, or for what reasons, are older persons/older person households more vulnerable than others
2) What kind of social protection interventions are effective for older persons
3) How can we assess the potential impact of these interventions?

The two main data sets which will be used to analyze vulnerability are the 2012 'Situation of Older Persons in Myanmar' which sampled over 4,000 persons aged 60 and over in 60 town ships in Myanmar, and the combined CLASP/REVEAL dataset, which sampled over 5,000 households in three States/Regions in Myanmar. Additional comparative analysis was undertaken, where possible, using data from the 2010 UNDP integrated Household Living Conditions Analysis.

We will consider the interaction between ageing, vulnerability and poverty using two age-related variables: the presence of one or more older persons in the household, and older-person headed households. Clearly, this does not specifically address the individual vulnerability of an older person within their household. This is due to two main reasons: firstly, the majority of the available data is focused on household vulnerability, not individual vulnerability. This makes an assumption that the household resources are shared reasonably equitably amongst household members, including PwDs, women and older persons. Following this, secondly, it is notoriously difficult to try to capture individual data on ownership, income etc. in communities which have a highly communitarian approach to ownership at household level. In essence, we do make a significant assumption that the individual vulnerability of an older person is significantly related to the overall household vulnerability, and that an older person in a vulnerable household is likely to be more individually vulnerable than an older person in a non-vulnerable household. It is conceivable, but difficult to measure, the extent to which older persons in non-vulnerable households may still be vulnerable. This assumption, though, is reasonably grounded in data from the HelpAge study, wherein over 2/3rds of older persons listed support from children or family as their major source of income/support, indicating that their own status is linked to the status of their children/relatives.

Are households with an older person more likely to be poor or vulnerable than households without an older person?

Over one third (35%) of households had one or more household member over the age of 60, and using the measure of poverty outlined in the previous chapter (asset profile in the lowest quintile), poverty rates for households with one or more members over 60 were similar to that of households without an over-60 member (19.6% vs. 19.5%). Poverty rates were slightly higher for households with an over-70 member compared with households without an over-70 member (20.1% vs. 19.4%) and interestingly, poverty rates were lower for households with a member over 80, compared with members without a member over 80 (18.4% vs. 19.6%). Overall, there is no significant linear relationship between age of household members and poverty.

If we look at the profile of households with one or more member over 60, compared with those without, we can see that there are several differences. Firstly, the proportion of households with an older person which are women-headed is much higher than households without an older person. We will explore this more later. Not surprisingly, households with an older person were more likely to have a person with

disabilities, which is due to the increased rates of disability associated with ageing. This may also be connected with the overall higher rates of days lost to ill health by income generating household members, where older persons were more likely to experience ill health. Interestingly, households with an older person were more lily to own land, and the average acreage was higher than that of households without an older person.

Table 1: Profile of OP households (over 60's)

	OP	Not
Household members (average)	5.1	5.0
Age of Household head	65.37	42.57
% female headed	34.6%	16.7%
% with person with disabilities	27.0%	11.2%
Number of dependents	1.94	1.92
Average number of income sources	2.68	2.67
% expenditure on food	32.4%	32.1%
% expenditure on debt	12.0%	13.0%
% of debt owned by money lenders	21.5%	25.0%
average # land acres owned	2.61	1.37
Average days lost per income generating member to ill health	5.38	4.68

The rates of female-headed households increase with the increased age of the older person household member, likely as a result of men having shorter life expectancy than women in Myanmar, and as such, the increasing likelihood that the surviving widow would become the household head on the death of her husband. This will be explored later. Again, not surprisingly, the rate of disability increases as the age of the OP member increases, as does the rate of dependency and the average days lost to ill health.

Table 2: Profile of households with an older person over 70

	OP	Not
Household members (average)	5.1	5.0
Age of Household head	69.74	47.17
% female headed	37.6%	20.4%
% with person with disabilities	35.0%	13.4%
Number of dependents	2.22	1.86
Average number of income sources	2.65	2.68
% expenditure on food	31.7%	32.3%
% expenditure on debt	12.2%	12.7%
% of debt owned by money lenders	22.4%	24.0%
average # land acres owned	2.79	1.65
Average days lost per income generating member to ill health	5.59	4.81

Table 3: Profile of households with an older person over 80

	OP	Not
Household members (average)	5.2	5.0
Age of Household head	73.48	49.79
% female headed	37.8%	22.6%
% with person with disabilities	36.2%	16.0%
Number of dependents	2.31	1.90
Average number of income sources	2.77	2.67
% expenditure on food	31.9%	32.2%
% expenditure on debt	11.0%	12.7%
% of debt owned by money lenders	22.1%	23.8%
average # land acres owned	3.06	1.78
Average days lost per income generating member to ill health	6.73	4.85

When we look at typical asset profile of households with a member aged over 60, the typical mean asset value scores were higher for household goods (such as TV, telephone) and transport assets ($p<0.001$) than for households without an over-60 member. Quality of shelter (house construction) was typically better for households with an older person (mean score 4.19 vs. 3.92, diff $p<0.001$) than those households without an older person. However, these differences narrow when comparing households with an over-70 member, but re-emerge again when comparing households with a member aged over 80, where asset profiles for transport and housing are again significantly better than households without a member over 80. This points to a phenomenon which appears consistent in this study, that the presence of an older person aged between 70 and 80 in the household appears to confer the most disadvantage in terms of increased vulnerability (see below) and asset profile. There are two possible explanations for this. The first is an assumption that older persons from poorer households had poorer health, and hence lower life expectancy, and hence the likelihood of survival into the eighth and ninth decade was linked with household economic status. However, no significant differences were found between poor and non-poor households for health indicators or overall life expectancy. The other possibility, also connected, is that of 'survival of the fittest'; that the older persons most likely to survive are in fact the most active, and those who confer significant socio-economic benefit on the household.

Ageing and vulnerability

If we look at vulnerability, as defined by the Umbrella Model, the first observation is that overall vulnerability rates for households with a member aged over 60 do not vary significantly from households without an over-60 member (24.6% vs. 24.1%). However, households with a member aged over 70 are more likely to be classified as vulnerable than those without a member over 70 (26.3% vs. 23.8%, OR 1.14, 0.98-1.31) and with households with a member aged 80 and over, the probability of vulnerability increases to 28% vs. 24%, OR 1.23 (0.94-1.5). One of the major influences on whether an OP household is classified as vulnerable is whether that the older person is disabled or not. Households

with a disabled member over 60 are more likely to be vulnerable than households with a non-disabled older person (33% vs. 22.5%, OR 1.7 (1.44-1.93). In fact, if we exclude households with persons with disabilities and compare households with non-disabled members aged over 60, and households with non-older person, the vulnerability rates are HIGHER for households without an older person (24% vs. 22.5%, OR 1.09 (0.94-1.24) suggesting that disability is a major factor in influencing vulnerability related to ageing. This is consistent with previous observations, which identified disability as the major influence on age-related vulnerability in Myanmar.[2]We can see that there are several differences between households classified as vulnerable which do not have an older person, and those that are classified as vulnerable and which do have an older person. As we have noted previously, vulnerable OP households are more likely to be female-headed and have a person with disabilities than non-OP vulnerable households, and hence have slightly higher rates of dependency and more days lost to ill health. When we look at the key contributory factors to vulnerability amongst households with older persons, they are productive income, food security and health. In general, physical asset profile and decision making were superior in households with an older person, compared with those without, indicating that there are positive (protective) effects of having an older person in the household.

Table 4: Profile of vulnerable older persons HH versus vulnerable HH without OP

	OP	Not
Household members (average)	4.8	4.7
Age of Household head	65.82	40.78
% female headed	38.9%	19.0%
% with person with disabilities	33.5%	12.0%
Number of dependents	2.21	2.14
Average number of income sources	2.34	2.35
% expenditure on food	34.0%	33.1%
% expenditure on debt	14.8%	17.7%
% of debt owned by money lenders	25.9%	33.6%
average # land acres owned	2.06	0.83
Average days lost per income generating member to ill health	12.97	10.72

Interestingly, there is a strong linear relationship between the age of the oldest older person in a household and the probability of that household being female headed (R^2 co-efficient of 0.57, indicating strong correlation). We will explore this in more detail in the next section.

When we turn to older person headed households, we find that the proportion of households headed by an older person aged 60 or over is 31.9%, and the percentage decreases with increasing age of the household head. Likewise, we can see in table 7 that the percentage of older- person headed households is nearly 40%, although this is lower in the 60-70 range and increases again in the 70+ range. There is an interesting finding which is that rates of vulnerability are overall higher for older person headed households (25.2% vs. 23.8%) but this appears to be due mainly to higher rates of vulnerability where the household head is aged between 70 and 80 (9.7% of all households). This appears to be due

[2] http://www.sydney.edu.au/health-sciences/disability-symposium/.../MGriffiths.pptx

to the increased vulnerability of female older person headed households, and especially widowed older persons who become household heads. We cannot determine a time-sequence from the available data, but it would seem that the increased vulnerability amongst the 70-80 year old older person headed household is linked to the death of the male spouse, possibly in the previous 5 years, and subsequent loss of income. This is a significant finding when we consider factors which may help us identify at-risk households. The evidence points to the fact that households with a recently deceased male spouse may be at higher risk of poverty (i.e. they are more vulnerable) and so this may point to a selection criteria for assistance.

The effect of widowhood appears to be linked only where the older female is household head, as households with an old (aged 70 and over) , widowed female who is not the household head have vulnerability rate of 23.5%, compared to 25.3% where the house is headed by an over 70 female.

Table 5: Comparison of vulnerability of older person headed households in different age bands

	All 60 and over	60-70	70-80	80+
Headed by OP	31.9%	18.8%	9.7%	3.4%
% of OP HHH headed by female OP	39%	35%	45%	49%
% of female OP HH headed by widowed female	80%	75%	83.4%	88%
Vulnerability	25.2%	23.4%	28.5%	23.7%
Vulnerability of female OP HHH	26.9%	25%	32.6%	18%
Vulnerability of male OP HHH	24.1%	22.4%	25.2%	33%
Vulnerability of OP widow HH	24.6%	22.4%	30%	17%
Vulnerability of OP non-widow HH	36%	34%	44%	20%

The education status of the household head appears to have a significant impact on vulnerability of older person headed households. Less than one-third of older person household heads had middle school or above education, compared to 56% of household heads aged under 60. Vulnerability rates were significantly lower for older person-headed households where the household head mad middle school or above education (20.9% vs. 26.9%, $p<0.0001$)

Older Persons & livelihood participation

Findings from the situation analysis of older persons in Myanmar revealed that under one third (29.1%) of all persons aged 60 and over reported having worked in the previous year, with the highest proportion being in the 60-64 age range. Of those with a current occupation, the majority worked in agriculture, and only 3.8% were employees. Around one fifth (22.5%) of older person's income was reported form own work or work of spouse, with the majority of income being from children or relatives.

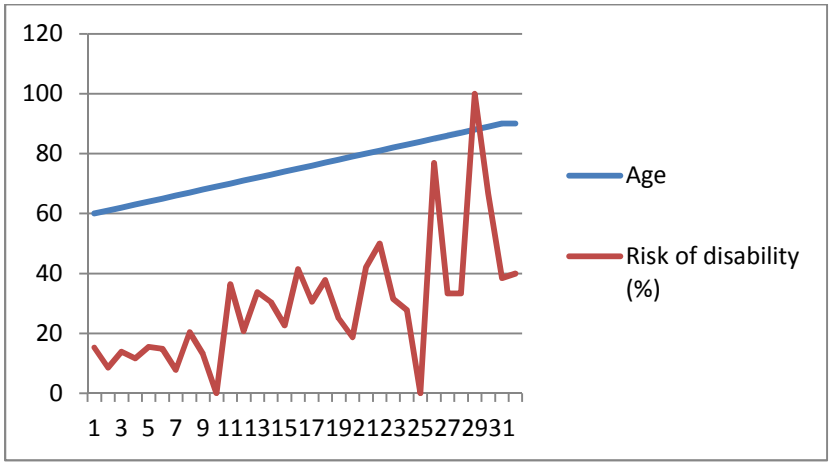
Analysis of the CLASP/REVEAL/PRIDE dataset demonstrated that 43.6% of persons aged 60 or over were not involved in household income generation, and this proportion, not surprisingly increased with age.

Of those who were involved in household income generation, the majority were involved in supporting the family business (35%) casual labour (17.5%) or waged employment (3.7%). When we look at the link between vulnerability and whether older persons are involved in livelihoods or not, analysis of the data shows that households with dependent older person (meaning older persons not involved in livelihoods) have higher rates of vulnerability than households with one or more non-dependent older persons (25.6% vs. 21.8%, Odds Ratio 1.23 (1-1.46). Comparing the average ages of older persons in households with dependent and non-dependent older persons, the average age difference was not significant (average age 70 years for households with dependent older persons, vs. 67.1 years for households with non-dependent persons). However, households with nondependent persons were more likely to have an older person with a disability (45% vs. 28%) indicating that disability status is the primary factor influencing the likelihood of an older person being involved in livelihood or not, and hence a major factor in the extent to which household vulnerability is influenced by the status of the older person.

Older persons and health

As noted above, the health of older persons has a significant impact on overall vulnerability, particularly when related to disability. The Survey of Older Persons in Myanmar reported that 35% of all older persons had reported illness or injury during the previous 12 months, and that over half (52%) reported difficulty with basic self-care activities. 15% reported having hearing problems, and 29% had problems with vision. From the CLASP/REVEAL sample, 19% of older persons reported having problems with vision, 27% reported problems with blood pressure, 10% reported problems with heart disease or diabetes, and 23% reported having other significant unmet health needs. There is a significant correlation between increasing age of older persons and the number of days lost to illness, and a strong correlation between increasing age and likelihood of being disabled. Using a linear regression plot, we can estimate that the risk of disability increases by 1.8% every year (from a baseline of 15.3% at aged 60), so that by aged 90, the rate of disability is over 40%.

Table 8: plot of age and risk of disability (years/%)



Older Persons and Social Capital & Decision making

The presence of an older person in the household was associated with higher mean scores for decision making (5.83 vs. 5.23, $p<0.001$) and for social capital (12.6 vs. 11.3, $p<0.0001$), suggesting a link between ageing and increased social capital. These differences increase with the increasing age of the older person, so that the difference in scores for decision making and social capital is widest when comparing households with an older person 80 or above compared with households without an octogenarian member.

Interventions to reduce ageing related vulnerability

In this section, we will consider the likely impact on reducing vulnerability amongst households with older persons of different social protection approaches. Research from other countries has demonstrated the benefits of interventions such as old-age pensions, initiatives to improve the health of older persons, and interventions designed to increase the involvement of older persons in income-generation activities. In each case, we can utilize the existing data to project the likely outcome of a certain intervention on household vulnerability, and in doing so, make an estimate of the likely overall impact on age-related vulnerability. By applying different targeting criteria, we can also compare estimate of impact of one targeting approach with another. In this case, we will estimate the likely numbers of beneficiaries per 1,000 population who would be eligible under the stated targeting criteria, and then the likely reduction in vulnerability, and the number of beneficiaries required to lift one beneficiary household out of poverty. This is reported as the NNT, or numbers needed to target, as an expression of how many targeted beneficiaries are needed in order to reduce vulnerability in one household.

Old Age Pensions

The impact of old-age pensions has been widely studied, and current research point to the substantial benefits of various forms of income supplement for older persons[3]. However, opinions vary as to how to most effectively target income support, particularly where resources are limited. Based on findings from research in different countries, we can make assumptions about the likely impact of social pensions. For example, it is reasonable to assume that social pensions would reduce economic dependency, by providing an income stream linked to an economic dependent person. Moreover, we can assume that the income stream can act as an additional diversification of income generation, provided the support was reliable. Thirdly, we can assume that a social pension would have some impact on household income, and reduce the overall proportion of income spent on core essentials.[4] If we take these assumptions and apply them to our model, we find that if applied to all households with one or more households members over the age of 60, vulnerability amongst that group is reduced from 24% to 13%.

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[3] Barrientos, A. and R. Sabates-Wheeler, (2006), —Local Economy Effects of Social Transfer - Final Report for DFID , Institute of Development Studies (IDS), University of Sussex, Brighton.

[4] This assumption has been challenged somewhat by studies by Lui Jian et al (2011) at the Peking University School of Population studies, whose findings suggest that income support for vulnerable persons results in very little additional 'disposable' income, as the base need is often in excess of household income. This depends on the size of the income support.

However, this would require providing a continuous benefit to 380 households per 1,000. Hence, we can consider the numbers needs to target for different criteria

Table 8: number of target beneficiaries and vulnerability reduction (per 1,000 households) using social pension

Age	Targeted Beneficiaries	Vulnerable (Before)	Vulnerable (after)	Reduction	NNT
>60	380	93	52	41	9.36
>70	170	43	25	18	9.49
>80	49	11	6	5	10.11
PwD	227	51	33	19	12.15

This can be interpreted that you would need to provide pension for 9.5 households with a household member over the age of 70 in order to enable one household with over 70 member to improve status so as not to be considered vulnerable. This suggests that the most cost-effective approach to target pensions is to apply to those 70 or over. Targeting only disabled older persons with pension will have limited impact, because the cause of vulnerability in these households is not primarily linked with lack of income.

If we target households where the household head is an older person, we can see a different profile

Table 9: number of target beneficiaries and vulnerability reduction (per 1,000 households) using social pension for older person headed households

Age	Targeted Beneficiaries	Vulnerable (Before)	Vulnerable (after)	Reduction	NNT
>60	328	83	46	37	8.99
>70	144	39	23	16	9.23
>80	41	9	5	4	10.00
FHH	134	37	21	16	8.33

The most efficient approach is targeting households which are headed by a female older person.

Healthcare

Similiarly to social pensions, the impact of healthcare interventions for older people on vulnerability and poverty has been well documented in several countries[5], allowing us to make reasoned assumptions as to the probable impact of healthcare intervenstions on age-related vulnerability. Based on studies from Cameroon, we can assume that healthcare interventions for older persons are likely to reduce overall days lost to illness, and to caring for an ill household member, as well as a reduction in overall health expenditure, where preventative healthcare is known to reduce the larger out-of-pocket costs of emergency treatment. We can apply these assumptions to our study population in Myanmar. Once

[5] http://www.cerdi.org/uploads/sfCmsContent/html/201/Asfaw_Jutting_ppt.pdf

again, if we apply a healthcare intervention aimed at preventing or treating common chronic conditions such as hypertension, diabetes, heart disease, impaired vision and musculoskeletal complaints to all older persons over 60, we can predict a reduction in vulnerability of households with an older person from 24.4% to 18.7%. However, this would entail providing a service to 380 households per 1,000, which is a significant coverage. The data would suggest that healthcare programmes are best targeted either at older persons with disabilities, or at older persons with self-reported health needs. Although overall NNT is low for universal application, the overall number of beneficiaries is quite high.

Table 10: number of target beneficiaries and vulnerability reduction (per 1,000 households) for healthcare intervention for older person households

	Targeted Beneficiaries	Vulnerable (Before)	Vulnerable (after)	Reduction	NNT
>60	380	93	71	22	17.52
>70	170	43	35	8	21.42
>80	49	11	9	2	27.43
PwD	227	51	37	14	16.13
Self-reported	164	40	30	10	16.49

Livelihoods

The third social protection option is providing livelihood to households with dependent older persons in order to increase their participation in the household income generation activities. Again, based on research evidence from other countries, we can make some predictions based on the study population from Myanmar. We can assume that providing a livelihood intervention would at least reduce the number of economic dependents, and increase the household income stream diversity.

Table 10: number of target beneficiaries and vulnerability reduction (per 1,000 households) for livelihood interventions for dependent older person households

Age	Targeted Beneficiaries	Vulnerable (Before)	Vulnerable (after)	Reduction	NNT
>60	248	57	46	11	22.09
>70	114	29	20	9	12.36
>80	31	7	4	2	13.33
PwD	94	21	19	2	46.25

We can see again that the most effective approach to using livelihoods to target dependent older persons is to target those that are over 70, where the overall numbers needed to target are significantly lower. There is little benefit in targeting households with a disabled older person with a livelihood intervention, as the numbers needed to target are very high, suggesting that other factors are more significant in determining vulnerability amongst households with older persons with disabilities.