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## Agricultural Production Assets Transfer and Poverty Upward Mobility in Isolated Areas of Zambia: A Domestic Life Cycle Perspective

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### Abstract

In Zambia poverty mitigation programmes based on agricultural production assets transfer constitute social protection and have been implemented to help the poor change their experiences of poverty and transform their social economic relationships. The effect of these programmes in realizing substantial poverty upward mobility has however been hindered by a myriad of factors including failure to understand the poor's poverty situation and consequently misdirecting the poverty interventions. This study aims at clarifying changes in experiences of poverty due to agricultural production assets transfer, and identify potential intrinsic household attributes that could influence effective agricultural assets utilization among households within domestic life cycle stages. Participatory poverty profiling and rapid appraisals were done to respectively identify poverty perceptions and experiences, and elicit household attributes perceived to influence effective asset utilization. Data was collected from 150 randomly selected households. Results indicate that agricultural production assets transfer to poor rural households can help mitigate their poverty, but movement out of poverty does not spontaneously cover all poverty dimensions, and could be affected by intrinsic attributes of a household. Thus, anti-poverty programmes should pay enough attention not only to community age stratification but also to intrinsic household attributes and basic need areas which may respond most to interventions among the domestic life cycle stages.

**Keywords:** Constructivism, Domestic life cycle, Participatory profiling, Poverty upward mobility, Zambia

### Introduction

Poverty is characterized by the failure of individuals, households or entire communities to command sufficient resources to satisfy their basic needs (Alejandro, 2001). According to the 2010 Living Conditions Monitoring Survey, 61% of Zambians live below the poverty line<sup>1</sup>. Poverty in Zambia is often characterized by the rural prominence, where it affects 78% of the population, compared with 28% in urban areas (CSO, 2010). In Zambia poverty mitigation programmes based on agricultural production assets transfer constitute social protection and

have been implemented to help the poor transform their social economic relationships. Transfer of agricultural production assets is a more suitable form of social protection for developing countries like Zambia where the majority of the population is rural based and dependent on subsistence agriculture for a livelihood. While assets are multidimensional, provision of agricultural production assets as a form of social protection represents a coordinated push that should dramatically increase the poor's scale of production. The effect of these programmes in realizing substantial poverty upward mobility has been hindered by a myriad of factors including poor targeting, failure to understand the poor's poverty situation and consequently misdirecting

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the anti-poverty interventions. Assets thus either disappear within local political patronage networks or are just given to households which are not asset worth with little care for whether beneficiaries need or can use them, by virtue of their intrinsic household characteristics.

According to the Chronic Poverty Report of 2008-09, social protection, particularly social support such as through agricultural production assets transfer, helps the poor conserve and accumulate assets so they can improve their livelihoods and productivity. Poverty mitigation programs based on the income paradigm have not significantly changed pre-transfer poverty because they are designed to help maintain people by supporting consumption (Danziger and Plotnick, 1986). Social protection interventions using assets transfer, on the other hand, can lead to positive social economic outcomes because the assets are more often than not used to create opportunities, and thus increase well-being in ways that income cannot (Shobe M., and D. Page-Adams, 2001).

Poor households that can steadily accumulate assets will grow their way out of poverty and this growth could take some time depending on household intrinsic characteristics that condition their desired level of accumulation and ultimate equilibrium level of well-being. (Carter, M and Barret, C., 2006). Understanding poverty in asset space thus helps to determine whether upward mobility reflects asset accumulation and increased returns to the assets held by the poor. Further, a household's capacity to stand in the face of poverty varies with factors such as household size, composition and its stage in the domestic life cycle (Alejandro, 2001). Understanding poverty according to stages in the domestic life cycle can provide a better insight into the dynamic responses to development interventions among households as they evolve over time. This is because each of the stages in the developmental process of households is conducive to particular social arrangements that influence their ability to utilize availed resources.

Therefore, the objective of this study is to clarify changes in experiences of poverty due to agricultural production assets transfer within the domestic life cycle stages, and identify potential

intrinsic household attributes that could influence effective agricultural assets utilization among households with changed poverty experiences.

## Methodology

### Scope

Information rich cases were selected from Shangombo District (16° 05' S and 23° 75' E) of the Western Province (16° 3' 22" S and, 23° 45' 8" E) of Zambia. According to the 2006 Living Conditions Monitoring Survey of Zambia, the Western Province is the most stricken by poverty out of the country's ten provinces. Shangombo District is the poorest district in the Western Province. The district has a population of 70,049 and is quite uniform in terms of cultural practices, ethnicity, marriage patterns, and access to social amenities. It has common features such as poor road networks, subsistent farming being a major livelihood source, and less development interventions by non-governmental organizations and donor agencies. Its remoteness from main service centres has partly led to an autarkic local economy bordering on household self-sufficiency. Any external development interventions in the district are therefore likely to make tangible differences in poverty experiences among intervention beneficiaries compared to non-beneficiaries. Due to the unavailability of panel data to use as base line, villages without development interventions were selected as proxies for pre-development intervention villages. In this study therefore, the pre and post development intervention refers to either assets transfer versus none-assets transfer or beneficiary versus none-beneficiary scenarios.

### Sample Selection

The domestic life cycle consists of three main stages namely; Reproductive (symbolizing the initial family formation), Intermediate (representing maturing family development), and Dispersion (when parents are aging and children graduate into independent households) - (Alejandro, 2001). Zambian adults below 35 years are referred to as youths (Kaunda, 1974) and represent the reproductive stage. Fifty five years is the mandatory retirement age for public service workers (GRZ 1996) and represents the upper limit of the intermediate stage. Adults

above 55 years are considered to be elderly and therefore in the dispersion stage.

Limiting the sample to only villages with 75 or more households, five assets benefiting villages and another five non-assets benefiting villages were randomly selected. Households<sup>2</sup> in the selected villages of both categories were stratified by age of household heads (male spouses) to satisfy stages of the domestic life cycle. Five households from each stage of the domestic life cycle in each village of the two categories were randomly selected and interviews were conducted with both the male and female spouse. A total of 300 individuals were thus interviewed from the two sets of 75 households. The non-assets and assets transfer households respectively represented pre-asset and post-asset transfer households. Assets disbursed during intervention included brooder chickens to individual households and animal draft power packages (oxen and accompanying equipment) kept communally at village level.

Only households participating in the agricultural production asset transfer program for 5 to 7 years up to December, 2011 were targeted.

### **Rapid Appraisal for Effective Asset Utilization Attributes**

According to Carter and Barret (2006), assets are multidimensional and broadly include conventional, privately held productive and financial wealth, as well as social, geographic and market access positions that confer economic advantage. Carter and Barret further note that individuals have intrinsic attributes that condition their desired level of asset accumulation and ultimate equilibrium level of well-being. A rapid appraisal was conducted with local key informants including contact and lead farmers, government extension workers and other managers of asset based anti-poverty programs to solicit opinions regarding attributes which they perceived to influence effective utilization of granted agricultural production assets. Table 1 is a summary of the attributes:

**Table 1: Attributes Perceived to Influence Effective Asset Utilization**

No	Attribute	Associated Logic
<b>Ordinal</b>		
1	Level of education	Education helps better management
2	Number of own children	They determine family size and composition
3	Number of young dependents	
4	Number of adult dependents	
5	How many years one lived in the village	Understanding the local environment gives more flexibility
6	Period of employment	It could suggest level of pension earnings
7	How long the visit by friends took	The longer the visits, the higher the chances of exchanging progressive ideas
8	How long the visits to friends took	
9	How long one lived outside the province	Prolonged exposure to other peoples' ways of life can help change attitudes
<b>Categorical</b>		
1	Experience in managing cattle	Previous experience in managing an asset gives good lessons
2	Experience in managing chickens	
3	Main on-farm income source	A person involved in a familiar on-farm activity can be more committed
4	Whether employed formally before	Once formally employed individuals are more organized.
5	Kind of employment	Permanent employment has the benefit of assured pension compared to casual work
6	If one visits friends	Peer interaction helps exchange of good ideas
7	If one is visited by friends	
8	Participation in communal activities	It cultivates responsibility into an individual
9	Village leadership responsibilities	Leaders would want to set good examples
10	Vying for political elected office	Villagers with political ambitions have no time and

		lack commitment
11	Belief in traditional taboos	Traditional and Religious beliefs can hinder commitment and effective management of assets
12	Belief in religious taboos	
13	Type of assets once owned by parents	They could help as support to offspring in their early adult life.
14	Main off farm income source	On-farm activities will be disadvantaged if main livelihood is from off-farm income sources
15	If one ever lived outside the Western Province	Exposure to other peoples' ways of life can help change attitudes

Source: Field survey data (2011, 2012)

**Participatory Poverty Profiling**

While popular quantitative measures of poverty including the head count and the poverty gap index use income levels to determine the extent to which individuals on average fall below the poverty line, participatory measures of poverty deploy indicators of living standards and incorporate perspectives of those with the experience of poverty into the theorization, thereby providing better insights into what poverty means and feels for those actually experiencing it. Participatory Poverty Profiles can help to disaggregate poverty into several types and local definitions of poverty can help construct a more nuanced picture of the obstacles facing different groups of the poor (CPR, 2008-09).

For this study, which is constructivist, participatory poverty profiling was undertaken

and used uniquely with the brainstorming tool to enlist the perceptions and experiences of poverty among village members in the target district. Group brainstorming exercises were conducted based on the perceived needs approach (Mark & Lansley, 1985), which aims at ...”identifying minimum acceptable way of life not by reference to observed living standards, but by reference to the views of society as a whole”. The brainstorming exercise defined the local meaning of poverty and determined the key areas of perceived poverty. Arising from this, eight poverty dimensions were consensually identified (Table 2). Each poverty dimension was then characterised by specific indicators of living conditions describing experienced depths of poverty.

**Table 2: Participatory Poverty Profile Matrix: Perceived Dimensions and Experienced Depth of Poverty**

Perceived Dimension Poverty	Experienced Depth of Poverty			
	Light ←			→ Serious
Clothes	New from the shop	Second hands	From piecework	From good will
Dietary carbohydrate	Breakfast, lunch, supper and others	Two meals per day	Only one meal per day	Sometimes sleep without a meal in a day
Dietary protein	Big fish breams or meat	Small fish	Exotic vegetables or cow milk	Traditional vegetables
Education to children	Below college	Below 10 <sup>th</sup> grade	Below 8 <sup>th</sup> grade	Below 1 <sup>st</sup> grade
Farm power	Oxen and implements	Oxen only	Implements only	Manual labor
Housing	Corrugated roof with clay walls	Grass thatched roof with clay walls	Grass thatched roof with grass walls	Improvised
Income	Annual from farm produce and other	Seasonal from farm produce	Part from piecework part from farm	Always from piecework

	sources		produce	
Transport to hospital	Motor transport	Bicycle	Ox-cart	Traditional folded bed

**Source:** Field survey data (2011, 2012)

Note) “piece work” refers to agreed manual labour jobs performed on other peoples’ farms and paid for in cash or in kind (second hand clothes or package of farm produce for food).

The generated poverty profile in Table 2 represents a consensual perception by the local people, and it was also in line with fundamental human basic needs. The inclusion of farm power as a poverty dimension appears to reflect the hardship of producing enough food for household food security as well as managing a surplus for sale to realise income for purchase of other domestic essentials. A lack of assets such as livestock and tools in rural areas not only exposes the chronically poor to risks, but also excludes them from employment opportunities and the growth process. The separation of food into carbohydrate and protein components was premised on the local understanding that a complete meal should have a fair share of respectable relish (protein), and that the carbohydrate and protein represented different types of strategies to secure.

The semi structured questionnaire used to collect data on perceptions and experiences of poverty among non-asset beneficiary and asset beneficiary households was generated based on perceptions captured through participatory poverty profiling.

**Hierarchical Clustering of Effective Asset Utilization Attributes**

Cluster analysis is an exploratory data analysis tool for organizing observed data into groups of relatively homogeneous cases. It reveals associations and structure in data (Mooi E., and Sarstedt M., 2011) thereby enable identification of exemplars to represent cases. Using cluster analysis, “Type of Household” can represent a homogenous group of community members who are more likely to effectively utilize agricultural assets and gradually walk out of poverty. Targeting specific segments of the community, based on certain desirable attributes, with anti-poverty interventions can be cheaper and more

accurate with pronounced impact than broad-scale disbursement of assets. In this study, post asset transfer households indicating upward mobility in at least 50% of the poverty dimensions were identified. In Shangombo district where marriage arrangements are patriarchal with the female spouse having to move to the male spouse’s village and literally depend on his available resources, attributes for effective asset management were only considered on heads of households (male spouses).

**Data Analysis**

Descriptive statistics were used to accurately characterize the changes in poverty experiences among households in pre- and post-agricultural assets transfer villages. Hierarchical cluster analysis with Ward’s method (Rencher, A. C and Christensen, W.F 2012), and the Chi-square statistic were employed, using the Statistics Package for the Social Sciences (SPSS) programme, to differentiate households moving into lighter poverty experiences based on the attributes elicited from the Rapid Appraisal.

**Results and Discussion**

**The Domestic Life Cycle Stages and Upward Poverty Mobility**

Positive change in poverty experiences can be said to have occurred if there is an outward mobility (reduction) of the poor from deeper levels of experienced poverty, or an upward mobility of the poor into lighter levels of experienced poverty. Table 3 is a comparison of the percent of households in the most desired (lighter) level of experienced poverty between none-asset transfer (pre-transfer) villages and asset transfer (post-transfer) villages.

**Table 3: Household Migration into Lighter Poverty Experience**

		Households Experiencing Lighter Poverty (%)							
	Domestic Life Cycle Stage	Clothes	Dietary Carbohydrate	Dietary Protein	Education to Children	Farm Power	Housing	Income	Transport to Hospital
Pre Transfer	Reproductive	20*	14	8	10	30	8	38	0
	Intermediate	24	16	8	20	36	12	44	0
	Dispersion	0	8	0	12	26	16	32	0
Post Transfer	Reproductive	60*	48	10	28	46	32	44	0
	Intermediate	36	44	8	40	50	32	58	0
	Dispersion	16	16	8	24	36	14	52	4
Percent Points Difference	Reproductive	40**	34	2	18	16	24	6	0
	Intermediate	12	28	0	20	14	20	14	0
	Dispersion	16	8	8	12	10	-2	20	4
Average Difference		23***	23	3	17	13	14	13	1
Rank		1****	1	5	2	4	3	4	6

**Source:** Field survey data (2011, 2012)

Note: \*:% of reproductive stage households in pre-transfer villages experiencing the lighter poverty of clothes

\*\* : Percent points difference in reproductive stage households between pre and post transfer experiences in the lighter poverty of clothes

\*\*\*: percent points average difference in clothes lighter poverty experience across life cycle stages.

\*\*\*\*: Top ranked percent points average difference in clothes lighter poverty experience across life cycle stages.

Since assets are multidimensional and individuals have intrinsic attributes which may influence their effective utilization, the changes in poverty experiences above can at best be understood as resulting from the interaction between the many poverty dimensions and individual attributes, with the brooder chickens and animal draft power packages which were availed through asset transfer.

According to Table 3, at a glance, limiting to average differences, there were overall increments in the number of households that migrated into lighter poverty levels (upward mobility) in asset transfer villages. However, the reflected changes in experienced poverty were not shared equally between the domestic life cycle stages, with some stages showing larger differences in some poverty dimensions than others, suggesting that the upward mobility steps out of poverty did not spontaneously cover all poverty dimensions at the same time when assets were availed. Clothes, dietary

carbohydrate and education support to children showed the largest increments with more than 15 points in the percent of households experiencing lighter poverty. These were followed by positive changes in housing, income and farm power respectively. Further, the increments were not uniformly distributed; carbohydrate poverty upward mobility was more pronounced in the reproductive stage (40 % points), while income poverty upward mobility was more noticeable among the dispersion stage (20 % points), suggesting that different domestic life cycle stages would move up different experienced poverty dimensions at a time. The positive change in clothes poverty were mainly due to that at the reproductive stage (20 to 60 points), while that for dietary carbohydrate could be attributed mainly to the reproductive and intermediate stages with little contribution from the dispersion stage. The latter pattern appeared to be consistent over the positive changes in housing and farm power. The positive change in income poverty experiences

could be attributed mostly to that at the dispersion stage (32 to 52 points). On the other hand, the smallest increase was in the poverty of transport to hospital (1 point) followed by dietary protein (3 points). The increases in households graduating into the lighter poverty level appeared to reduce in accordance with the domestic life cycle stage with regards to dietary carbohydrate, farm power and housing, implying that the dispersion stage showed the least upward mobility. The opposite was true for income poverty.

The differences in life cycle stages with regards to dimensions of poverty responding most to assets transfer, and the inability of households to exhibit a tandem upward mobility pattern across all poverty dimensions alludes to the particular social arrangements within the respective domestic life cycle stages that influence their ability to utilize availed assets. Further, while the transferred agricultural assets would improve on the individual household asset stock, the asset level may not be sufficient

enough to catapult the household completely out of poverty. This observation appears to confirm Barret and Carter’s (2006) positing that there exists a dynamic asset poverty threshold that potentially separates those able to move to a high (non-poor) asset position from those caught in a low-level equilibrium trap.

**Years Spent in the Village versus Poverty Upward Mobility**

Households showing upward mobility in at least 50% of the poverty dimensions were assumed to possess attributes that favour effective asset utilization, and were identified per domestic life cycle stage for cluster analysis. One way Analysis of Variance (ANOVA) was conducted on ordinal (interval) attributes to determine on which classifying they are significantly different between the clusters. The significant differences between variables for the clusters suggested the ways in which the clusters differed or on which they were based. Table 4 is the ANOVA and descriptive statistics summary for the attributes.

**Table 4: ANOVA and Descriptive Statistics for Ordinal Attributes**

Ordinal Attributes		Domestic Life Cycle Stage								
		Reproductive(N=27)*			Intermediate(N=19)**			Dispersion(N=11)***		
Attribute	Cluster	Mean	F	Sig	Mean	F	Sig	Mean	F	Sig
Level of education	1	8.33	2.264	>.05	8.08	1.545	>.05	7.71	13.641	<.05
	2	6.67			9.29			1.25		
Number of own children	1	3.17	7.431	<.05	6.00	.350	>.05	2.14	.441	>.05
	2	5.44			6.71			3.15		
Number of young dependents	1	.83	2.410	>.05	.83	.209	>.05	2.86	.412	>.05
	2	2.22			.71			2.00		
Number of old dependents	1	.11	10.256	<.05	.83	4.204	>.05	1.00	.164	>.05
	2	1.44			.14			.75		
Years lived in village	1	28.39	157.55	<.05	43.05	55.935	<.05	26.00	38.538	<.05
	2	8.56			20.86			74.75		
Period of employment	1	1.3	1.774	>.05	1.0833	.384	>.05	3.8571	.872	>.05
	2	.5			1.5714			.7500		
How long the visits to friends took	1	2.89	.166	>.05	1.42	7.261	<.05	2.14	1.001	>.05
	2	2.44			5.00			4.25		
How long the visit by friends took	1	2.22	5.241	<.05	2.83	.278	>.05	3.71	.374	>.05
	2	4.44			3.37			2.50		
Period lived	1	0			1.67			5.57		

outside province	2	.56	2.083	>.05	4.29	1.777	>.05	3.50	.236	>.05
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Source: Field survey data (2011, 2012)

Note: \*: Cluster 1 and 2 (N=18 and 9 respectively)

\*\*: Cluster 1 and 2 (N=12 and 7 respectively)

\*\*\*: Cluster 1 and 2 (N=7 and 4 respectively)

F=F ratio

According to Table 4, the two clusters of households in the reproductive life cycle stage moving to lighter poverty experiences in more than 50% of the dimensions were significantly differentiated between the number of own children (F=7.431, P<.05), number of old dependents (F=10.256, P<.05), years lived in the village (F=157.55, P<.05) and how long visits by friends took (F=5.241, P<.05). Cluster 1 of the reproductive life cycle stage was composed of the majority households (66.66%) and characterized by small number of own children, less older dependents, prolonged stay in the village, and shorter stay by visiting friends. The opposite was true for cluster 2 with 33.33% of households. For the intermediate life cycle stage, the two clusters were significantly differentiated between years lived in the village (F=55.935, P<.05), and how long the visit to friends took (F=7.261, P<.05). Cluster 1 of the intermediate life cycle stage was composed of the majority households (63.16%) and characterized by more years lived in the village and short visits to friends. Cluster 2 of the intermediate life cycle stage was characterized by less years lived in the village with visits to friends taking much longer. The two clusters in the dispersion life cycle stage were differentiated between the level of education (F=13.641, P<.05), and the years lived in the village (F=38.538, P<.05). Cluster 1 of the dispersion stage had majority of the households (63.63%) and characterized by higher level education. However, unlike the reproductive and intermediate life cycle stages, it was characterised by less years lived in the village. Cluster 2 households were less educated and stayed more years in the village.

For all the three domestic life cycle stages, the clusters were significantly differentiated on the years spent in the village. One of the possible outcomes of a longer village stay could be prolonged engagement and interaction with other village folks leading to the advantage of investing social capital into the local networks. Benefiting from local networks requires

establishment of trust, and the development of trust from other village members is a process that takes place over time (Kadushin 2012). Social networks have value because they allow access to resources and valued social attributes. While individual social capital increases individual well-being and can lead to social upward mobility, group level social capital provides individuals with information that is timely and trustworthy (Kadushin 2012) and can provide better ability to navigate around hurdles. However, according to Table 4, the condition for longer stay in the village among majority households only applied to the reproductive and intermediate life cycle stages. Among the dispersion stage, upward mobility favoured those who lived fewer years in the village.

**Old Age, Level of Education and Poverty Upward Mobility**

According to Table 4, level of education was a uniquely differentiating variable in the dispersion life cycle stage. Majority households in cluster 1 of the dispersion life cycle stage had a mean average education level of grade 8, which represents upper basic education that can be used for employment in artisanship according to Zambia education standards. The dispersion domestic life cycle stage is however, composed of elderly individuals who were no longer in employment. This information may corroborate the assumption that households moving into lighter poverty among the dispersion life cycle stage were doing so partly as a result of their earned pensions when they worked from outside the village and only returned recently, hence fewer years lived in the village. Given the higher levels of education and the consequent possibility of earned pension from prior employment, households in the dispersion life cycle stage could have had their asset portfolios further improved upon receipt of agricultural assets. The likelihood of improved returns to assets may also explain why according to Table 3, the dispersion life cycle stage had up to 20 % points increment in the number of households

moving into lighter income poverty experience. It was also possible that better educated household heads could use their literacy for improved decision making and more systematic planning which favour effective asset utilization. This information suggested that in this isolated area of the country, education earlier in life could be an important factor to improved wellbeing during old age

### **Reproductive Stage Family Size and Poverty Upward Mobility**

According to Table 4, the number of own children and number of adult dependents significantly differentiated the clusters only in the reproductive life cycle stage. The reproductive life cycle stage symbolizes initial family formation. In Table 4, cluster 1 which had majority households also had the smallest number of own children ( $M=3.17$ ,  $F=7.431$ ,  $P<.05$ ), and the least number of old dependents ( $M=.11$ ,  $F=10.256$ ,  $P<.05$ ) compared to cluster 2 (minority households) with respectively number of own children ( $M=5.44$ ) and number of old dependents (1.44). While the relatively large family size in cluster 2 could represent a potential household labour pool for farm work, cluster 1 with majority households had a relatively smaller household size and such could have been partly the condition which enabled the households in the reproductive life cycle stage to migrate into lighter poverty experience. The smaller number of large households which were able to migrate into lighter poverty experiences could also be confirmation that household size is one of the key drivers into poverty Lister (2004). The information suggests that having a larger family size during the early stages of family formation may be a hindrance to improved wellbeing.

### **Peer Interaction and Poverty Upward Mobility**

According to Table 4, the reproductive life cycle stage was differentiated between how long friends visited the households, while the intermediate stage was differentiated between how long the households visited friends. While the two scenarios may have different

implications; "...I can't invite friends to visit me because I have nothing to give them...", as one respondent retorted, unlike visits by relatives which often go with "checking on the health" or discussing family issues, there is an element of peer interaction when friends visit each other. While cluster 1 of the reproductive domestic life cycle stage showed that majority members were visited only half the time spent in cluster 2, cluster 1 for the intermediate life cycle stage shows that majority members spent slightly more time when they visited friends. This information suggests that peer visits among the youthful, reproductive life cycle stage take relatively shorter days while those in the intermediate life cycle stage, representing family maturity, generally take more days. These visits to and from friends inherently consist of some form of interaction that may involve exchange of rich new ideas and information which could favour effective asset utilization. This is more so that the kind of visits considered in the study were those involving friends from distant places outside the neighbourhood, as visits to places outside one's community could have the advantage of structural holes, and thus the benefit of progressive information from diverse sources (Kadushin 2012). The advantage of peer interaction lies in the more age-appropriate vocabulary and examples. According to the Australian Parental Website (<http://raisingchildren.net.au>), experiences with peers affect social, emotional, and cognitive functioning beyond the influences of family and neighbourhood. The information therefore suggested that visits among peers especially between households in the reproductive and intermediate life cycle stages could have been a contributing factor to their poverty upward mobility.

### **Reproductive Life Cycle Stage and Upward Mobility Push Factors**

For categorical (nominal) variables, the Chi-square test was done with cluster analysis to determine whether there is any significant association between a given attribute and specific clusters. Table 5 is the summary for cross tabs analysis using SPSS.

**Table 5: Chi-square Statistics for Categorical Attributes**

Categorical Attributes	Reproductive		Intermediate		Dispersion	
	Chi-Square	Sig	Chi-Square	Sig	Chi-Square	Sig
Experience in managing cattle	.307	.580	1.362	.243	.629	.429
Experience in managing chickens	4.320	.038	A*		A*	
Main on-farm income source	3.857	.277	2.315	.314	1.925	.165
Ever had salaried job	.297	.586	.425	.515	.505	.477
Kind of salaried job	1.699	.428	5.689	.058	1.493	.474
Visit to friend in last one year	1.985	.159	2.574	.109	1.061	.303
Visit by friend in last one year	2,345	.125	1.534	.216	.505	.477
Participation in village activities	6.750	.009	.833	.361	.052	.819
Leadership position in village activities	3.068	.080	.172	.678	.505	.477
Ever stood for elected office	A*		A*		A*	
Belief in traditional taboos	4.876	.181	.854	.652	2.357	.308
Belief in religious taboos	2.025	.363	.735	.692	1.397	.497
Assets once owned by parents	12.525	.002	2.078	.149	.196	.658
Main off-farm income source	4.531	.104	3.242	.356	1.637	.804
Ever lived outside home province	2.077	.150	.090	.764	.351	.554

Source: Field survey data (2011, 2012)

Note: A\*: No statistics are computed because no household responded

According to Table 5, none of the categorical variables significantly differentiated the clusters under the intermediate and dispersion life cycle stages. In the reproductive life cycle stage however, there were significant associations between the clusters and respectively the experience of managing chickens ( $X^2 = 4.320$ ,  $P < .05$ ), participation in village activities ( $X^2 = 6.750$ ,  $P < .05$ ), and assets once owned by parents ( $X^2 = 12.525$ ,  $P < .05$ ). The rest of other attributes did not produce any significant associations.

Experience is a good teacher, so it is said. Households that had previous experience of managing village chickens may have used their experience to more effectively manage and utilize the brooder chickens that were availed under the agricultural assets transfer. This information therefore suggests that prior experience of some activity may be advantageous when a similar activity is presented for improved livelihood purposes.

Participation in village activities provides an opportunity to show initiative and develop skills and boost self-confidence. Getting involved with community activities makes individuals come into contact with positive role models, and cooperating with other adults encourages to see the world in different ways. Community

activities also give people a chance to apply the skills they already have, thus an opportunity to see how many skills one has, and how valuable they can be. Consequently, such could have been partly the condition which enabled the majority households in the reproductive life cycle stage to migrate into lighter poverty experience.

The types of assets one's parents possessed at the time of beginning own adult life may be significant in laying a foundation for a smooth take off into the future. Prior ownership of certain types of assets by one's parents could play a catalytic role as stepping stone into lighter poverty experiences among households in the reproductive life cycle stage. In this study, majority of the parents owned cattle, and the role of parents' cattle could be traced in the possibility of easily accessible animal draft power (oxen and accompanying equipment) in the absence of assets transfer, and thus helped to build an initial asset portfolio which was further built through assets transfer.

The information above suggested that household heads in the reproductive life cycle stage who had prior experience of managing a given asset, participate in community activities, and their parents had valuable assets had a better opportunity to migrate into lighter poverty when availed agricultural production assets.

### Using Potential Attributes to Manage an Asset Transfer Programmes

The household attributes noted above as having potential to mediate utilization of transferred agricultural assets could also be used as basis for effectively targeting of agricultural assets beneficiaries and also for follow-up management of agricultural asset transfer programmes. An asset transfer programme aimed at demonstrating quick impact could for example deliberately leave out households with negative attributes such as larger family size in the reproductive stage, those who have lived only a few years in the village among reproductive and intermediate life cycle stages, or less educated elderly household heads in the dispersion stage. On the other hand a programme designed to reach out to the poor who lack the desired attributes could for example use absence of experience in managing a particular asset as basis for introducing a relevant training component to provide the needed experience. In the same vein, households characterised by lack of participation in village activities could either be subjected to conditional asset transfers that emphasise village community participation, or designed a deliberate exposure programme to the outside of their neighbourhood where they could learn from peers.

### Conclusion

Agricultural assets transfer to poor rural households can help uplift their livelihoods by changing their experienced poverty for the better. However, the responses by households to agricultural assets transfer vary according to the domestic life cycle stages, with some life cycle stages showing more pronounced responses among households in some poverty dimensions than others.

A good comprehension of intrinsic household characteristics could be helpful not only in selecting and determining which households may have the potential to quickly make the first steps out of poverty, but also help design follow up programmes to prop up the poorest with most disadvantaged attributes.

The varied responses to agricultural production assets transfer imply that different domestic life

cycle stages have particular social arrangements that influence their ability to utilize the availed production assets. This would suggest, therefore that anti-poverty programmes should pay enough attention not only to community age stratification but also to intrinsic household attributes and basic need areas which may respond most to interventions among the domestic life cycle stages.

### Notes

- 1): The poverty line in Zambia is calculated based on a costed food basket for a family of six and is occasionally adjusted after some considerations.
- 2): Households were defined using the criteria of those “eating from the same pot”, sleep under the same roof and have been living together for more than six months. Although multiple marriages are not uncommon in the study site, no polygamous households were included in the survey.

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