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REPUBLIC OF ZAMBIA

MINISTRY OF AGRICULTURE AND LIVESTOCK

RE-SETTLEMENT ACTION PLAN FOR LUSITU IDSP GROUP 1 SITES

IRRIGATION DEVELOPMENT SUPPORT PROJECT (IDSP)

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LIST OF ACRONYMS

ANOVA	Analysis of Variance
bkcal	Billion kilocalories
BOQ	Bill of Quantities
BOZ	Bank of Zambia
CLG	Company Limited by Guarantee
CLT	Community Land Trust
CP&CB	Community Participation and Capacity Building
CSO	Central Statistics Office
DACO	District Agricultural Officer
DC	District Council
DDCC	District Development Coordination Committee
df	degrees of freedom
DMMU	Disaster Management and Mitigation Unit
ECZ	Environmental Council of Zambia (old name)
EMA	Environmental Management Act
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
Fstat	F statistic, the ratio of two sample variances
FAO	Food and Agriculture Organisation
FNDP	Fifth National Development Plan
GDP	Gross Domestic Product
GIS	Geographical Information System
GPS	Global Positioning System
GRM	Grievance Redress Mechanism
GRZ	Government of the Republic of Zambia
HH	Household
HHH	Household Head
IAP	Interested and Affected Parties
ICBP	International Council for Bird Preservation
IDSP	Irrigation Development Support Project
IPMP	Integrated Pest Management Plan
IPS	Irrigation Policy and Strategy
IRM	Internal Review Mission
IUCN	International Union for the Conservation of Nature

kcal	kilocalorie
MACO	Ministry of Agriculture and Cooperatives (old name)
MAL	Ministry of Agriculture and Livestock
mkcal	Million kilocalories
MLGH	Ministry of Local Government and Housing
MOM	Management Operation and Maintenance
NAP	National Agricultural Policy
NIP	National Irrigation Plan
NWP	National Water Policy
O&M	Operation and Maintenance
OP	Operational Procedure
PAP	Person Affected by the Project
PPP	Public Private Partnership
PPSC	Participative Planning Site Committee
RAP	Resettlement Action Plan
RCC	Resettlement and Compensation Committee
RPF	Resettlement Policy Framework
SAF	Site Activity Facilitator
SCCI	Seed Control and Certification Institute
SD	Standard deviation
SNDP	Sixth National Development Plan
SOFRECO	Société Française de Réalisation, d'Etudes et de Conseil
TLU	Tropical Livestock Unit
ToR	Terms of Reference
WUG	Water User Group
WWF	World Wildlife Fund
ZEMA	Zambia Environmental Management Agency
ZESCO	Zambia Electricity Supply Corporation

GLOSSARY

Affected Farmers	Farmers with control of land within the development area but not living within it. Control means they have user rights to the land allocated by the Chief's administration.
Asset Holder	People who reported themselves to the MLGH Valuation Department as controlling fixed assets within the area designated to irrigation development.
Community Land Trust	Community Land Trust (CLT) is the Trust who administers and holds that part of the land of the Community for which the Community has a 99-years lease agreement with the Government of Zambia.
Cut-off Date of the RAP	The date after which no new entrants to the scheme are permitted without special consideration of the community and the Resettlement and Compensation Committee.
Development Area	Development area is the area as designed to be irrigated in the Engineering Feasibility Study, March 2014, or the resettlement areas identified by this RAP. This includes all associated infrastructure that may not be within the irrigation blocks or resettlement area.
Displaced Household	Displaced households are households resident in the area scheduled for development. These households will be subject to involuntary resettlement.
Entitled Person	An entitled person (EP) is one who has lost his/her assets or income directly/indirectly due to the Project intervention and is eligible to receive compensation from the IDSP.
Head of Household	Head of Household means a person whether male or female who is the person primarily responsible for the decision making and welfare of a household.
Households	Households are groups of people self-reported as "sleeping and eating together". This is the standard CSO definition of the household and accepted for all surveys and censuses carried out in Zambia.
Irrigation Allocation	Irrigation Allocation is the irrigation plot within Tier 1 allocated by the CLT to a person for which that person entitles user rights. The rules regulating the allocation are defined in the Land Administration Policy of the CLT.
Land Holders	Land Holders on customary land are those with dispensation for land use that can be traced to the Chiefdom in which the customary land is located.
Project Affected People	Project Affected People (PAP) refers to those within the project area that will be affected by the Irrigation Project or the Resettlement Site. Affected people may or may not be

Rehabilitation	displaced. The process to restore income earning capacity, production levels, and living standards in a longer term. Rehabilitation measures are provided in the Entitlement Matrix as an integral part of the entitlements.
Relocation	The physical relocation of an affected person from his/her pre project place of residence.
Resettlement Policy Framework	Resettlement Policy Agreement (RPF), prepared in 2010 for IDSP, lays out the policy, principles, procedures and entitlements, as well as the institutional responsibilities to be followed in preparing subproject RAPs under the Loan.
Resettlement Action Plan	Resettlement Action Plan (RAP) is a time-bound action plan with budget setting out resettlement strategy, objectives, entitlements, actions, responsibilities, monitoring and evaluation.
Tier 1	Tier 1 is the irrigated area for smallholder farmers who wish to take up irrigated agriculture using mainly family labour, with individually farmed plots of 1 ha or less, using surface irrigation (hose-furrow system) to grow vegetables and other high value crops.
Tier 2	Tier 2 is the irrigated area consisting of larger plots of between one and five hectares each, for cultivation by emerging small-scale commercial farmers or small groups of neighbouring farmers, using sprinkler irrigation systems and hired labour to profitably grow mainly field crops.
Tier 3	Tier 3 is the irrigated area consisting of large plots of at least 60 ha each under centre-pivot irrigation operated by a private company that will eventually be wholly owned by the community but initially will be jointly owned with a private sector investor
Vulnerable Groups	Vulnerable Groups are groups which may need special consideration in the allocation of irrigated plots. These groups include youth and polygamous wives.

1 EXECUTIVE SUMMARY

1.1 Characteristics of the Project

The Irrigation Development Support Project (IDSP) plans to construct a pressure irrigation scheme with a development area of 269 ha on the left bank of the Zambezi River in Chirundu District, downstream of the Kariba Dam. The development will serve commercial, emergent and smallholder farmers. Smallholder and emergent farmer project beneficiaries will be the existing inhabitants of the area (see section 2.1).

A necessary condition of implementation is the delivery of the present customary land to state land with a 99-year lease in favour of a Community Land Trust, which will administer the development area on behalf of the community as a whole. This allows the community to enter into contract with commercial and emergent farmers who will rent irrigation land from the community whose land it is under customary law, and who will retain the head lease under statutory law.

1.2 Area and Numbers of People Affected

The number of people resident in Lusitu within the project area (Sitinkwe village) is about 1,906 people in 382 households. These households were on site in the dry season of 2013. Subsequently the Participative Planning Site Committee (PPSC) named a further 99 households in the village, so the best estimate of population is 436 households and 2,152 people. The vast majority are smallholder farmers (see section 3.2). All households, plus disadvantaged individuals including about 113 youths and 12 polygamous wives, will receive an irrigation allocation. About 9 individuals with existing very large and large farms will become emergent farmers (see section 8.4).

About 84 households will be displaced and moved from their present location of residence within the development area and relocated in resettlement areas totalling 69 ha. Each household will be compensated for the loss of fixed assets with a low cost rural house constructed by IDSP (see section 4.2). It is understood that the total compensation for housing will at least replace what has been impacted by the project so that HHs can at least maintain their standard of living. The 84 displaced households will also receive an average allocation of 0.80 ha of land on which a

new house will be built and the remaining land within this plot to be used for rainfed agriculture and will in part substitute rainfed farming activities currently taking place within the development area: this is similar to the present area cultivated as a garden parcel (see section 3.2.2). The resettlement areas make provision for 97 house plots so a physical contingency for 13 new houses has been added in the budget, though these houses may not necessarily be constructed.

71 farmers farming a total of 238.2 ha are affected by the development area and will have to re-locate about 209 ha (an average of 3.35 ha per farmer) within the areas that are intended for irrigation and resettlement. For those farmers who live in the development area, 69 ha will be compensated by land within the resettlement areas. Compensation for the balance, 140 ha (an average of 2.3 ha per farmer) will be identified through the customary land allocation system operated by the Chief's administration. Households that are not displaced or affected may have to give up a portion of their present land allocation as a result.

All Lusitu households will receive a fully equipped irrigation allocation from inside the scheme (averaging about 0.31 ha),

1.3 Eligibility Criteria

All households in the Lusitu area enumerated by census before the cut-off date are eligible to receive an irrigation allocation from the Community Land Trust. Households at present resident in the development area will receive a low cost rural house. Households resident and farming in the development area or residing in the Resettlement Site will have access to a house plot in the resettlement areas with an average size of 0.80 ha. Chief will allocate rainfed land outside the project area which is under customary tenure in line with the terms of this RAP under the customary land allocation process, as they do now (see section 4.2).

1.4 Proposed Compensation and Rehabilitation

Displaced households from inside the development area will receive a low cost house, estimated value ZMW 55,000. If the value of their fixed assets exceeds this value, they will be compensated for the balance in cash. Households may receive only one house as compensation.

Title to the development area will be in the name of the Community Land Trust, which will administer the land and contracts to use the land by commercial and emergent farmers on behalf of the community. Irrigation allocations will be allocated to individual households in perpetuity (in line with general principles and protections acceptable to the World Bank) to reflect their present customary user rights. The Community Land Trust will make housing allocations with the same tenure arrangements. The responsibility for re-allocating the Traditional Customary (rain-fed, common and grazing land) will be assumed by the Chief's administration as represented by village headman in line with the terms of this RAP.

All households in the Lusitu area will be entitled to an irrigation allocation, which will significantly increase their annual farm and household budget through the twice-yearly cultivation of maize, vegetables and legume crops. The irrigation allocation is demonstrated to have sufficient leverage on farm incomes to be considered an adequate means of livelihood rehabilitation (see section 8.4).

1.5 Public Consultation Undertaken

Public consultation was in three forms (see section 11). In February-April 2013, a succession of scoping meetings was held to identify the project, estimate the resettlement implications and prepare a RAP strategy. From January 2014, after enumeration, cadastral mapping and valuation of property, the community participated in validating the data using, among other checking systems, the cadastral map to locate property and household profile cards to validate household data. Finally, Public Disclosure was carried out at the Lusitu site on 9th May 2014.

1.6 Institutional and Legal Framework for Implementation

The institutional framework for RAP implementation conforms to the IDSP Resettlement Policy Framework document (see section 5.2) and will require a Resettlement and Compensation Committee with members taken from the District administration, Chief's administration and the Participatory Planning Sub Committee already established to handle community issues at the project site. Village headmen will be required to assure access to cultivable land before and during the construction period of the project. A Grievance Committee will be established at the level of the District Commissioner. The MAL Safeguard Specialist (supported by IDSP's CP&CB) will be responsible for monitoring, supported by World Bank Technical Missions.

The legal framework for implementation is discussed in section 5.1. The key to successful implementation, of resettlement as well as the project, is the conversion of land tenure in the project development and resettlement areas from customary land under the Chief's administration to statutory land under a Community Land Trust. The land delivery processes to achieve this will be closely observed (section 5.1.1), as will the supporting laws governing valuation and compensation for land and property (section 5.1.2) and disputes, social welfare and resettlement.

1.7 Costs and Proposed Timing

The construction schedule of the Lusitu Irrigation Project is envisaged to be 12 months, with an estimated start date of February 2016 (see Figure 12-1). The RAP will be implemented prior to construction. The necessary sequence for this is detailed in the RAP Implementation Schedule and can be summarised as setting up the Community Land Trust, carrying out the land transfer process, the construction of housing units and services, setting up the Resettlement and Compensation Committee (RCC) and Grievance Committees and then the resettlement process itself. The re-location schedule takes account of the rainy season so displaced households can establish rainfed farming and move at the end of the 2015 dry season. With re-settlement completed before the scheme contractor moves to site, construction can proceed with minimal damage to standing crops.

The total cost of RAP implementation is estimated to be about ZMW 6.91 million (USD 1.11 million) including contingencies.

SIGN:.....

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2 INTRODUCTION

2.1 Irrigation Development Support Project

2.1.1 Description of the Project

IDSP is promoting investment in new irrigation schemes on both customary land and State land at three sites (IDSP Group 1: Lusitu in Southern Province (customary land), Mwomboshi in Central Province (both State and customary land) and Musakashi in Copperbelt (State land) presently occupied by small scale farmers except for Mwomboshi, which is occupied by small scale farmers on the left bank of the Mwomboshi River and large scale commercial farmers on the right bank. The schemes are new because they introduce an innovative and inclusive design financed through a PPP arrangement. The design of such schemes includes provision for:

- A Government owner and administrator of assets (UtilityCo);
- A Scheme Operator;
- A commercial farm (Tier 3: FarmCo);
- Emergent farmers (Tier 2);
- Smallholder farmers (Tier 1).

The experience and benefits of economies of scale of the commercial farm should be transferred to emergent and smallholder farmers through the provision of extension and marketing services. The services are acknowledged by smallholders by the use of some of their land by the commercial farm, the contribution smallholders will bring to the increased scale of farming activities on the irrigation scheme and as low-cost producers (and possibly out-growers) of the commercial enterprise.

The exchange of these services will be codified through formal PPP management agreements. The irrigation management partners (the Operator's commercial relationship between FarmCo and Tier 1 and 2 their Water User Groups (WUG)) will allow the State to charge for the use of water used on the irrigation scheme at its full supply cost, though there will be cross-subsidy between commercial and smallholder farmers to allow the latter to accumulate operational capital. PPP agreements require secure contracts based on State law. It will therefore be

necessary to transfer customary land to State land, whereupon the Commissioner of Lands will arrange leases.

The background of the project is covered in :

- Pre-feasibility Studies (Consulting Services for the Engineering Pre-feasibility Study and Socio-economic Baseline Survey Under IDSP, FINTECS/NAEC, June 2010);
- Feasibility Studies (Feasibility Studies and Participatory Planning of Group 1 Sites and Pre-feasibility Studies of Group 2 Sites, Z-A Consultants, March 2014) and;
- Detailed Engineering Design, Z-A Consultants September 2014. Many other supporting reports exist, available from IDSP/MAL. Notable amongst these is the Resettlement Policy Framework (RPF) Final Report, August 2010 prepared for IDSP by BRL and NIRAS Zambia. The institutional recommendations of this report are discussed in section 5.2.

IDSP's Community Participation and Capacity Building Provider carried out the RAP in collaboration with MAL, MHLG and CSO.

2.1.2 Location of the Project

Lusitu is located on the left bank of the Zambezi River downstream of the Kariba Dam and about 15 km south of Chirundu. The site is located at latitude 16° 06' 32" south and longitude 28° 50' 31" east and has an average elevation of 382 m amsl. The site is centred on the village of Sitinkwe, the area of which is about 5,000 ha. Sitinkwe is on customary land under the jurisdiction of Chief Chipepo in Southern Province. Sitinkwe village was established in the 1950s to resettle the Gwembe Tonga during the flooding of the Kariba Dam.

2.1.3 Reason for Displacement

About 270 ha of irrigation will be constructed within Sitinkwe village area, for a mix of irrigating commercial, emergent and smallholder farmers as described in section 2.1. The most suitable land for irrigation is on the lower Zambezi terrace. This has been allocated to Tier 1 (133 ha) and Tier 2 (38 ha) irrigation. Suitable and marginally suitable land exists on the higher terraces away from the river but is fragmented by topography and areas of sodic soils. Here an area of about 98 ha has been allocated to Tier 3, with the intention that this should be a commercial irrigated banana plantation. It will be necessary to clear these sites of existing settlement and rainfed cultivation before demarcation and construction, which is scheduled for 2016. Later, displaced households, along with other Sitinkwe households, will receive irrigation allocations on the developed land.

2.2 Summary of the Area and People to be Affected

Sitinkwe village is divided into about 14 sub-villages on customary land under the administration of Chief Chipepo. At Lusitu sufficient land is available for the rainfed agricultural production of the population but land suitable for irrigation is limiting in respect of area and location. Irrigation is already widely practised but this is confined to recession agriculture in the dry season on the Zambezi floodplain that

is inundated when Kariba Dam discharges during the rains. The flood plain is therefore quite unsuitable for a formal irrigation scheme.

Sitinkwe village was established in the 1950s to resettle the Gwembe Tonga during the flooding of the Kariba Dam. The present Tonga population numbers about 2,152 people in 436 households. Very little in-migration has occurred and the vast majority of residents have lived there all their lives. The Lusitu site is a functioning traditional community system: the population depends almost entirely on agriculture, and at about US\$ 255 per ha per annum land productivity from cropping is quite high. Many households practice recession agriculture and minor irrigation on the Zambezi floodplain in the dry season. Livestock ownership is also important (over 700 cattle and 1,400 goats) and probably accounts for 30% of net farm income. Nevertheless the Lusitu area is severely food insecure; at least one third of households are affected and the risk of drought is high so the importance and value of irrigation is well understood locally.

The main risk to project implementation is that recession agriculture and minor irrigation presently practiced presents a cheaper and less risky (in terms of collective organisation) alternative to the formal irrigation system being proposed by IDSP. A secondary risk to adoption of formal irrigation is the present importance of livestock in the farm budget, the organisation of both irrigation and low intensity livestock rearing is challenging.

2.3 Summary of the Resettlement Proposals

2.3.1 Present Demographic and Land Use Characteristics

Table 2-1 gives demographic and land use statistics for the three Group 1 sites together with the proposed irrigation development at each site. Tier 1 will be for the use of all households in each area. There will be no displacement of people of the project areas of the three project sites to areas outside the project areas. However, there will be no opportunity for in-migration of Tier 1 users from outside the existing communities to any of the three sites.

Table 2-1 IDSP Initiatives and Site Characteristics

Site	Total site area ha	Suitable for irrigation ha	Un-suitable for irrigation ha	Planned Irrigation Development, ha				Persons number	HHs number	Net Farm Area ha	Gross Cropped ha	Livestock		
				Tier 1	Tier 2	Tier 3	Dam and other irrigation infra-structure					Cattle number	Shoats number	Grazing area, ha
Mwomboshi														
Kalimina	1,572	796	776	115	96	0	168	1638	277	1592	995	357	49	597
Hankwa	431	277	154	0	64	104	91	445	76	928	454	214	211	474
Toba	2,231	1,178	1,053	164	47	520	738	1000	184	1196	627	185	410	569
Malama	873	562	311	126	88	312	49	509	81	412	247	52	123	165
Total Mwomboshi	5,107	2,813	2,294	405	295	936	1,047	3,592	618	4,128	2,323	808	793	1,805
Musakashi														
Farm 4287	1,880	922	958	99	51	312	12							
Farm 4288 (SADA)	2,500	510	1,990	99	51	416	14							
Total Musakashi	4,380	1,432	2,948	198	102	728	26	1,826	362		824	34	34	3,556
Lusitu (Sitinkwe)	4,903	1,934	2,969	133	38	98	7	1,906	382	1,404	1,017	718	1,367	2,969
TOTAL	14,390	6,179	8,211	736	435	1,762	1,079	7,324	1,362	5,532	4,164	1,560	2,194	8,330

Additional irrigation infrastructure taken as 2%, does not include operating area of centre pivots

The area allocated to Tier 1 is in each case sufficient to provide an adequate irrigation allowance to each household. The RAP reports demonstrate that at all three sites the irrigation allocation will contribute substantially to net farm income, it will be manageable with the labour resources available and it will provide an incentive to adopt the irrigation facilities provided by the project. In respect of resettlement requirements though, the main challenge is to organise the access of the beneficiary population to Tier 1 irrigation while at the same time allocating a substantial proportion of the suitable land available at each site to Tiers 2 and 3 and associated irrigation infrastructure.

There are few complications to the re-settlement required to accommodate the irrigation scheme which is small in area compared with the total village area, though it will be sited on the best quality land in the area which for that reason is mostly under cultivation now. The number of households to be relocated from the area designated for irrigation is in the order of 84 (the number of asset holders is 136) but the majority of households live to the immediate west of this area on land which is unsuitable for irrigation development. Displaced households can be accommodated there, within the community they are part of. The village area is large enough for alternative land for the rainfed agriculture presently within the designated irrigation blocks to be relocated by the Chief's administration, though it may be on sodic soils unsuitable for irrigation. This is unlikely to be a problem as these soils are leached every year and rainfed cultivation can be practiced without serious risk of land deterioration. There is no requirement for displacement of any of the existing resident population: all will be project beneficiaries. However, any opportunity for in-migration by additional project beneficiaries will be limited to emergent farmers, a prospect that is not welcome to the existing population.

Re-settlement to accommodate the proposed irrigation is considered feasible. Land for re-location of both houses and rainfed cropping within the designated irrigation blocks is available, though alternative land for rainfed cropping will be of lower quality than that used at present. There is no serious problem of access from housing to irrigation areas, though some households may find benefit in small adjustments from their present location. The area designated for commercial farming is well separated from the Sitinkwe settlement (though it is under rainfed farming by the Lusitu community which will have to be re-located). Incremental benefits per household will not be outstanding but returns to household labour may double. To commence irrigation some of the farmer groups will require support including training, credit and input supply.

A major benefit of the project to all present residents will be the allocation of an irrigated plot, the size of which should be not only commensurate with a hydraulic management unit but also with the household's ability to farm it and with size and productivity of land lost. An irrigation allocation strategy has been formulated to demonstrate the feasibility of land re-organisation with-project (see section 8.4, particularly Table 8-5). However, while theoretical solutions can be found, community consultation revealed that local solutions to irrigation allocation would probably be more sustainable.

2.3.2 Analysis of Alternatives Justifying the Need for Displacement

The alternatives in accommodating the existing population while constructing the proposed scheme (from which the affected population will directly benefit) are:

- Allow the population to continue to live in their present locations;
- Move them to an alternative site outside the village area;
- Move them to an alternative site within the same village area.

The first option is a zero-option and as such not an alternative. The two other options can be considered as alternatives.

The second option is alternative 1 but a contradiction. If the affected population is moved from its village area the remaining population will no longer be the complete community that is intended to make its land available to Tier 2 and 3 farmers for commercial operations. Part of the community will lose control of the land that is its primary resource in the PPP arrangement proposed for the project. An important ethos of IDSP is that smallholders, emergent farmers and commercial farmers, with their complementary resources of land, labour, capital and business ability should cooperate and so enhance the irrigation project. Separating the community, or part of the community from its land is not in fact an option.

The second alternative (option 3) is clearly the favourable course of action. Members of the community presently living and farming within the areas designated to irrigation should be moved outside, but with the minimum of disruption in terms of distance from other members of the community, distance from the irrigation from which they will benefit from directly and access to the other resources they are using at present (rainfed land, grazing and fuel wood). In short, the concept of inserting a displaced population in a host community is not relevant in the IDSP project proposals. The community should retain its identity, with as few members changing their location of residence as possible.

The analysis of alternatives justifying the project design is described in detail in the Environmental and Social Impact Assessment (ESIA).

2.3.3 Objectives of Resettlement

Only three categories of Person Affected by the Project (PAP) are expected:

- Category 1: Those living and farming on customary land inside the area designated to irrigation blocks (84 households);
- Category 2: Those living on customary land outside the area designated to irrigation blocks but with rainfed or irrigated parcels inside (71 farmers);
- Category 3: Those living on customary land outside the area designated to irrigation blocks but having to give up part of their or all of their present rainfed or irrigated parcel to those displaced in Category 1 and/or 2 (number dependent on the allocations made by the Chief's administration).

The general principles governing terms of re-settlement and compensation are described in section 4. Those households presently living inside areas designated as future irrigation blocks will be moved to a location as close as possible outside the block and compensated accordingly. According to the Government of the Republic of Zambia (GRZ) law compensation should be payment of the full replacement cost of their fixed assets lost; in addition they should receive a

disturbance allowance and support to re-locate the household. IDSP proposes instead to construct, at project expenses, new housing for households displaced from irrigation blocks. This new housing will also compensate for the loss of fixed assets such as grain stores, kraals and barns that can easily be reconstructed. People will not lose assets of real value/sources of livelihood that they will not be able to move. Loss of perennial crops could be compensated separately but the cost will be minor. The advantage of this "compensation in kind" means monetary transfers are avoided. The disadvantage is that the principle of compensation is weakened: some households (particularly the poorer) will receive greater compensation than the value of the assets they have lost.

Those households presently farming inside areas designated as irrigation blocks (209 ha or 78% of the area to be irrigated, farmed by 71 farmers) will be allocated a similar rainfed area outside the block by the Chief's administration. Their rights to this land will remain customary. A Community Land Trust must be formed to give the community the head lease.

All project beneficiaries will receive an irrigation allocation and support to begin irrigated farming operations: the irrigation allocation is shown to provide ample livelihood restitution (see sections 8.4.2 and 8.3.4). PAPs will receive all the direct benefits that an irrigation allowance will bring including substantially enhanced net farm income, food security and flexibility in cropping pattern to respond to market conditions. PAPs will also receive fringe benefits associated with the scheme including access to the Investment Support Fund, support from the commercial farming operation (input supply, extension, marketing opportunities) and general economic development (value added operations). The RAP concludes that income restoration will not be an issue for the community at large or any of the individuals within it.

Within the Lusitu community there are vulnerable groups whose interests should be safeguarded. The socio-economic characteristics of the food insecure, female headed households (many of which are polygamous wives) and youth were all examined in depth and it was concluded that reservation of irrigation allocations for polygamous wives and youth needs to be made. But for all of the vulnerable groups, the availability of household labour is often an issue: allocations need to be made bearing in mind not only existing land resources but also the ability to farm (particularly access to labour and working capital). Various theoretical and practical solutions are discussed in section 8.4 but it was concluded that the best solution will be devised by the community with guidance and monitoring from Community Participation and Capacity Building (CP&CB) Provider.

2.3.4 Estimates of Land Acquisition and Resettlement

All land at Lusitu is under customary tenure and will not be transferred from community control. However, the land to be developed for irrigation (276 ha) and resettlement areas (69 ha) will be delivered from customary to State Land following the due process (see section 5.1.1.3). Then, the Commissioner of Lands will prepare a 99-year lease in favour of a Lusitu Community Land Trust. This trust will administer the land on behalf of the community.

About 20% of Lusitu households will be resettled from the development area of 276 ha. These 84 households will be established in resettlement areas totalling 69 ha. The resettlement areas make provision for 97 house plots so a physical

contingency for 13 new houses has been added in the budget, though these houses may not necessarily be constructed. A low cost rural house will be constructed, financed by IDSP at a cost of about KMK 55,000 each, for each displaced household. The construction cost would therefore be in the order of ZMW 4.6 million. Only one household has fixed assets valued at more than ZMW 55,000 and he will be reimbursed in cash for the balance, the cost of this will be in the order of ZMW 15,450. In those few cases (11) where a household has more than one affected asset holder, the second asset holder will be compensated for loss of fixed assets only and the household will receive only one house. Fixed assets of second asset holders are valued at an estimated ZMW 67,070. Perennial crops (ZMW 13,000) are few, and could be reimbursed separately to allow owners to re-plant quickly.

The re-organisation of rainfed holdings is feasible. Displaced households will have an average of 0.80 ha in the resettlement area, which is similar to the average size of the “garden” parcel now. Only 209 ha of alternative rainfed farming land needs to be found in the village area outside the area to be developed and about 33% of this will be in the resettlement areas. Given that the village area is about 5,000 ha and the present area cultivated is only just over 1,000 ha this is feasible. However, alternative rainfed land will certainly be of lower quality than the areas from which it has been displaced. The combination of irrigated plot and rainfed land that each PAP will receive will be sufficient to compensate for any loss of rainfed land.

3 CENSUS AND ECONOMIC SURVEYS

3.1 Methodology

Survey methods, identification of entitlements and compensation framework follow Government of Zambia procedures, taking into account the general directives in World Bank Operational Directive 4.12, the specific instructions in CP&CB Terms of Reference and the RPF. The RAP survey teams were fielded with the support of the Ministry of Agriculture and Livestock (Land Husbandry, part of Technical Services Department), the Ministry of Local Government and Housing (Valuations Department) and Central Statistics Office (Ministry of Finance) and comprised of civil service professionals from each department who are fully certified and mandated to carry out the work required. While grievances will almost inevitably arise during the course of resettlement implementation, the basic data on which resolution will be adjudicated will be un-disputed except in the case of genuine surveying mistakes.

RAP fieldwork was undertaken by government employees from three separate Ministries:

- MAL Land Husbandry (Technical Services Branch) undertook cadastral and land use mapping in field teams composed of one Surveyor's Assistant and one DACO's Camp Officer accompanied (part time) by one Chief's Representative. One Surveyor supervised the two teams in the field;
- Central Statistics Office undertook a census of population in the project areas. Field teams were composed of one Supervisor, Enumerators and accompanied (full time) by one Chief's Representative;
- MLGH Valuation Department undertook valuations of fixed assets of households in the project areas in field teams composed of one Valuation Officer and two Valuation Assistants.

For logistical and administrative reasons it was difficult to organise fieldwork so that all teams were present on the ground at the same time using the same household and locational identifiers. At Lusitu the cadastral survey proceeded with the location of main field boundaries pointed out by the village headman with Site

Facilitators and DACO's Camp Officers accompanying. At the same time CSO used the household list to conduct interviews and take GPS readings of house plots. This process was hampered by the daily absence of many households who were cultivating irrigated plots on the Zambezi floodplain. Finally, comparing the cadastral map with the irrigation block boundaries, it was possible to identify affected households by their GPS locations so that Valuations Department could visit and undertake an asset inventory.

The cadastral survey and valuation procedures followed were the standard methodology used by the departments concerned and resulted in production of a cadastral map (section 4) and asset inventory by household (section 8.2.2). The RAP Census was designed by CP&CB. A questionnaire and supporting field manual are available but have not been included in this report. The data was entered, analysed and reported by CP&CB.

RAP Census questionnaires were signed by HHH and village headman on completion, as were Valuations pro forma. The cut-off date of the RAP is the 5th July 2013 when the census was completed. The significance of the cut-off point is that it identifies by name and location all residents within the project area on completion of the RAP census. These residents will be defined as project beneficiaries and will therefore be entitled to a share in the irrigation scheme through a specified irrigation allocation from which incremental farm income will accrue. The amount of this benefit is discussed in section 8.3 and in more detail in the socio-economic impact assessment (part of the ESIA). Project beneficiaries will also receive community fringe benefits from Tier 3 operations (e.g. access to agricultural services (extension, input supply, marketing etc.)). Finally displaced persons will be eligible for resettlement entitlements, specified in the Entitlement Matrix in 4.3.

3.2 Results of the Census

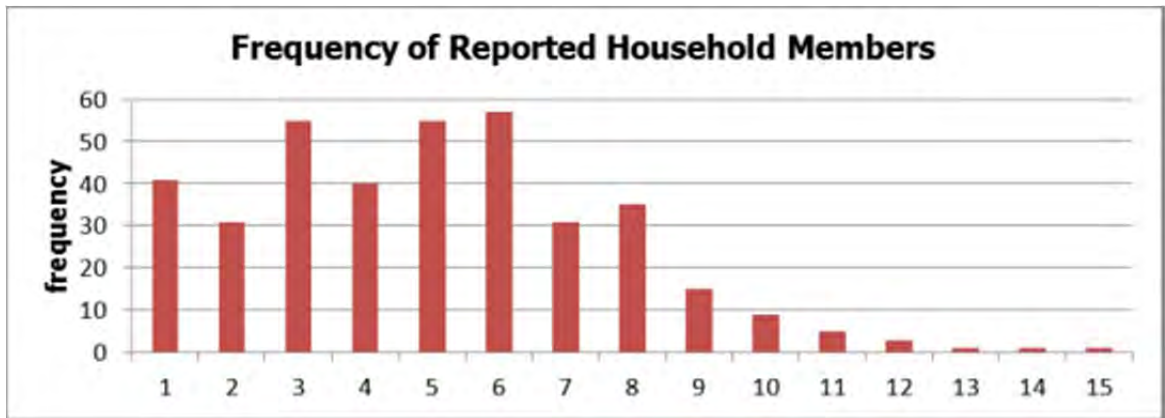
3.2.1 Demographic Characteristics

The population census was carried out at Lusitu during the period 20th June to 5th July 2013. A questionnaire was administered to each household by the CSO field team that collected household head names and, for each member of the household sex, age relation to HHH, presence or absence from the site, years in residence at the site, occupation, education, ethnic group and disabilities. Further information was collected by household on farmed and cropped areas including crops grown within and away from the site. Information was also collected on livestock ownership and common grazing rights.

The census counted 1,906 people in 382 households. The frequency of household size is shown in Figure 3-1. The large number of single person households is surprising: this may have to do with the fragmentation of polygamous households into sub-units in an attempt to capture more land rights. The issue of single person households is discussed in more depth in connection with irrigation allocations (see section 8.4). The definition of a household as "a group of people who live and eat together" (the standard CSO definition) actually depends on the level of observation, with sub-households (often polygamous wives) being members of higher order households. The maximum number of members reported in one household was 15 and the mean was five members (SD=2.7). The average age of

the population (1,765 of which reported their age) is only 20 years of age and the sex ratio is 906 males to 1,000 females.

Figure 3-1 Frequency of Reported Household Members



The history of the Lusitu site is that it was very sparsely inhabited in the early 1950s and was then used to re-settle the Gwembe Tonga displaced by the flooding of Kariba Dam. Figure 3-2 shows the immigration of a number of (now elderly) residents during this period, 55-60 years ago. Many have now died so the immigration, which must have been substantial, is not very marked on the graph. Very little in-migration took place in the subsequent 30 years. Then within the last 20 years a few families (supposed to be so because the variance of the age of immigrants is wide) numbering about 200 people in total appear to have entered the area, increasing the population by about 10%. Nevertheless, and as shown in the solid line representing age equal to period of residence, the vast majority of Lusitu residents (90%) have lived there all their lives. All report themselves as Tonga.

Figure 3-2 Years of Residence by Age

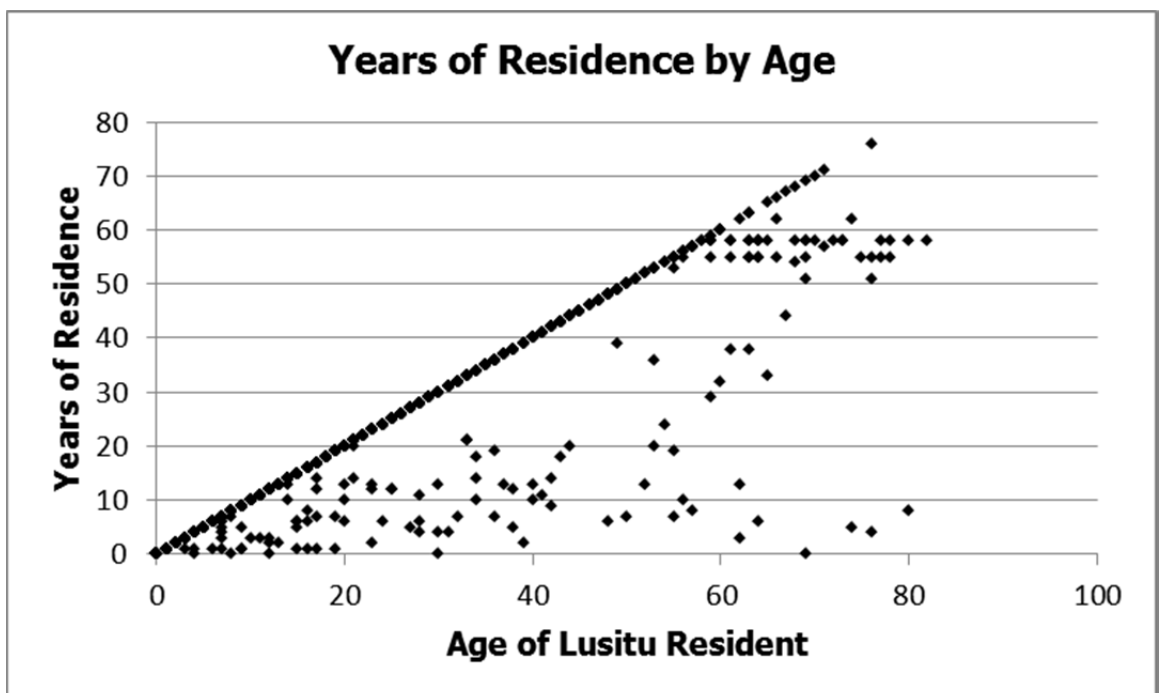
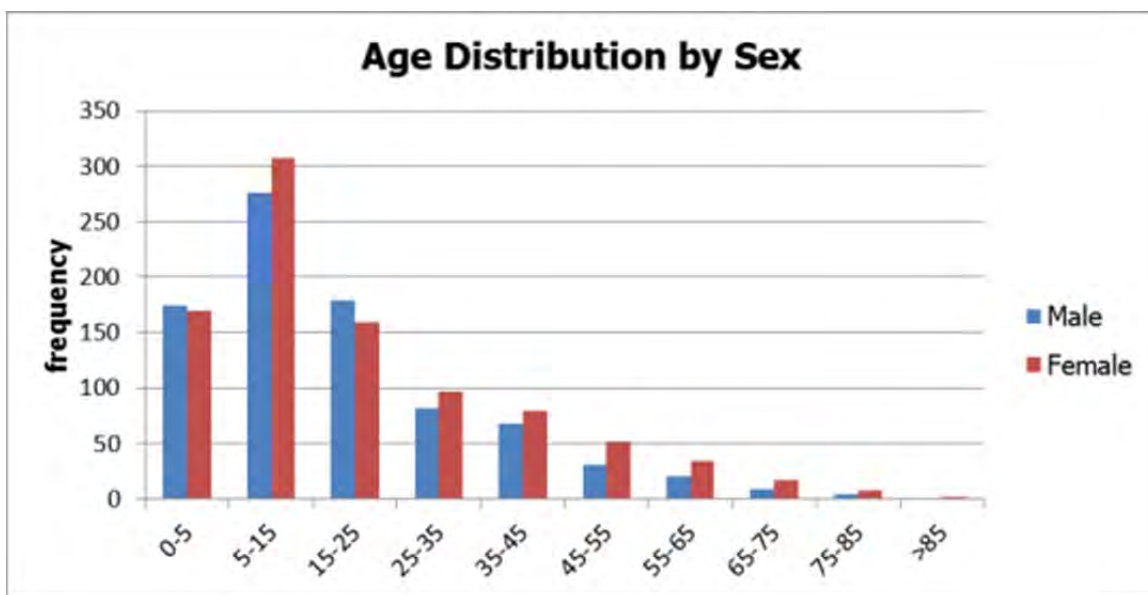


Figure 3-3 shows that the birth rate appears high in the last 15 years. This year (if the presence and age of the very young are reported in the census correctly) the crude birth rate is about 42 per 1,000, which is equal to the national average for Zambia.¹ About two thirds of the Lusitu population is under 25. The Figure also suggests a higher male mortality rate in the over 25 age group, with consistently more females than males in each age group, some of which may be attributed to HIV/AIDS related deaths and/or there may have been a small amount of male out-migration.

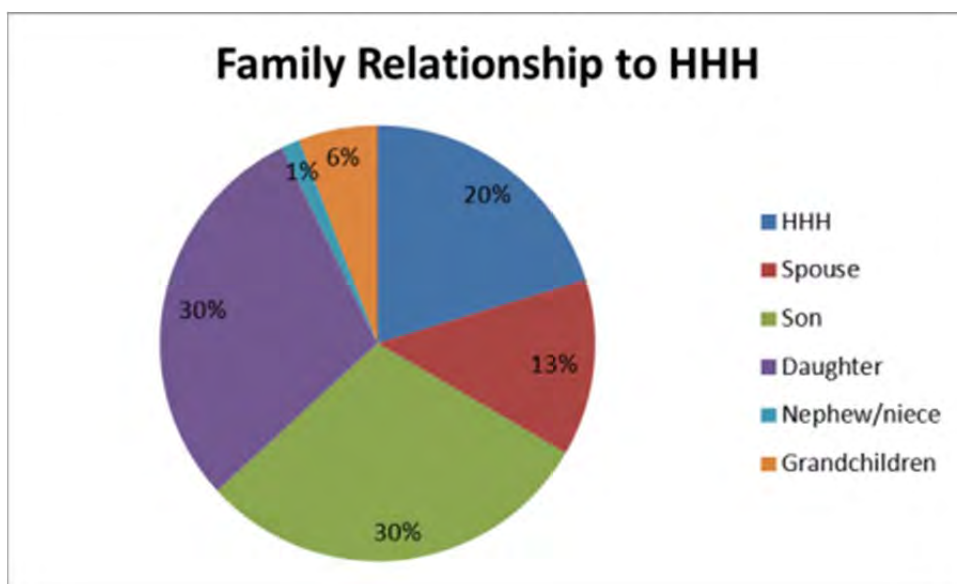
Figure 3-3 Age Distribution by Sex



The overall family structure of Lusitu households is shown diagrammatically in Figure 3-4 in relationship to HHH. The family has a nuclear structure, with 93% of people being reported as household heads, spouses and sons and daughters in equal proportion. A small but significant proportion is grandchildren, suggesting that children may remain associated with parents after their marriage, or that possibly children with separated or deceased parents may be cared for by grandparents.

¹http://www.indexmundi.com/zambia/birth_rate.html

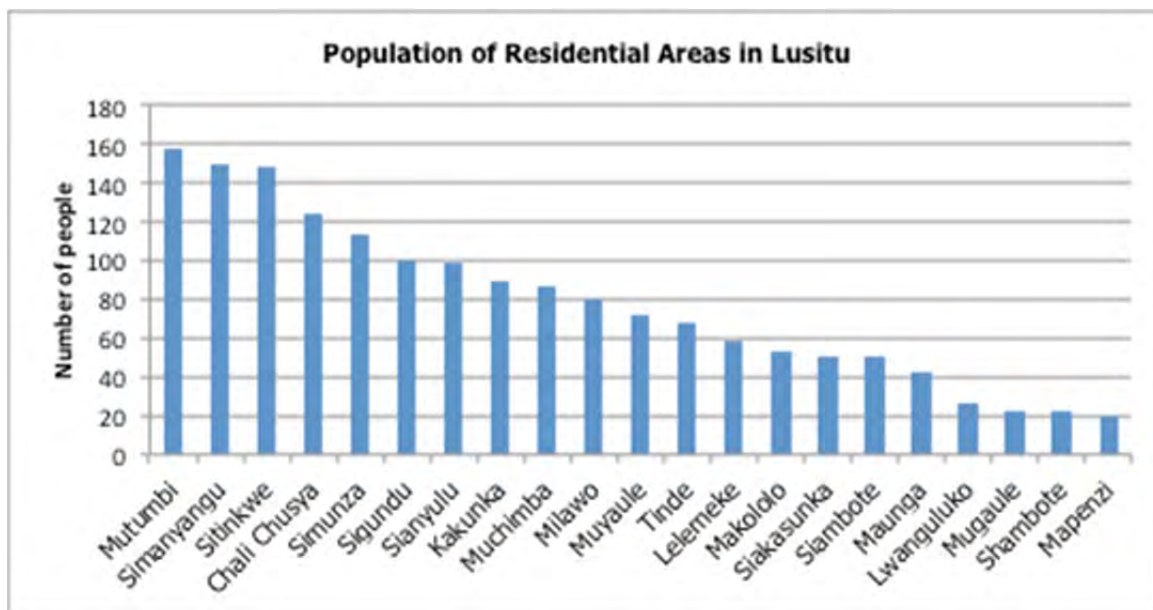
Figure 3-4 Family Relationship to Household Head



It is remarkable that the reported incidence of polygamy is much smaller than reported in a similar census in 2011 (see [Lusitu Irrigation Project Land Inventory Report 2011-2012](#), Irrigation and Land Husbandry and Land Department, 2012, and further reported in [The Relationship between Household Wealth, Marital Status, and Gender of Household Heads at Lusitu Group 1 Site](#), CP&CB Provider IDSP 2013). While the enumeration areas of the two censuses were slightly different, in 2011 44 polygamist households were reported in the area, whereas in 2013 only 12 polygamous households were reported (3% of households). The 2013 census is probably in error in this respect, with individual women in polygamous marriages reporting themselves as a separate household and therefore indistinguishable from widowed and divorced female-headed households. In Mwomboshi it was possible to make a reasonably informed estimate of polygamous households, but the data was not so amenable in Lusitu. This does not matter – such women will still be entitled to an irrigation allocation in their own right.

The area of survey is made more complex by households reporting sub-village areas as their location of residence. On the one hand these sub-villages may be “flags of convenience” for obtaining subsidised agricultural inputs. On the other they may be clan areas where specific family groups are found. Village officials sometimes refer to 14 key zones: there are 16 locations with groups of more than 50 households. The names of the residential areas with populations of greater than 20 people (or six households) are shown in Figure 3-5. 99 people and 16 households did not report their residential area.

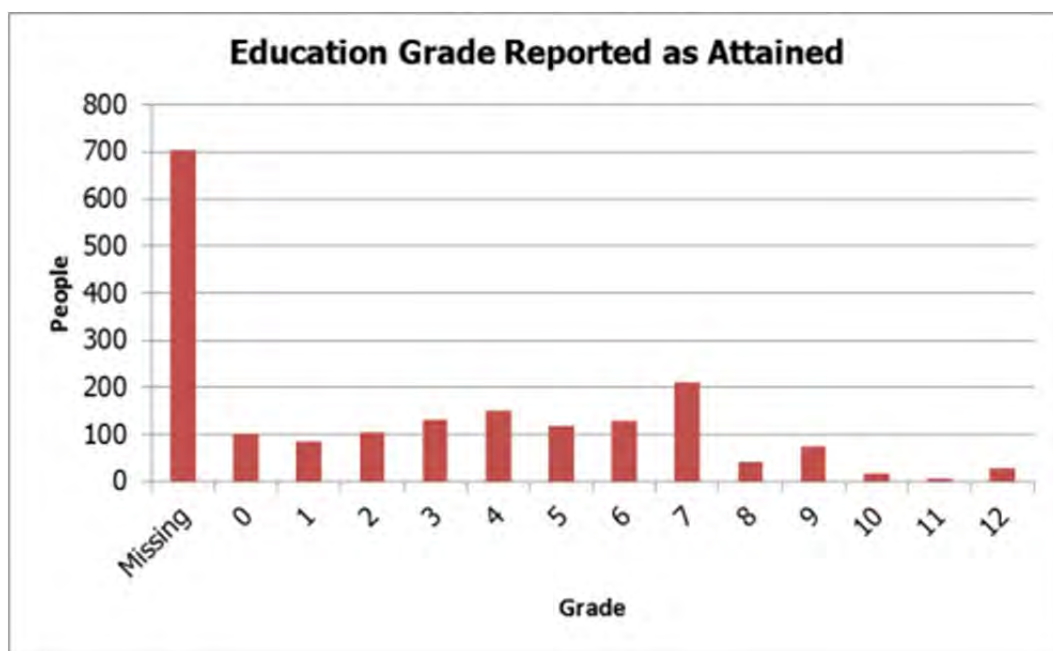
Figure 3-5 Population of Reported Residential Areas in Lusitu



The occupation of Lusitu residents is overwhelmingly agrarian. Of the total population 34% are reported to be farmers, and a further 2% are “farm workers” – if there is a difference. 50% are either school pupils or children not yet attending school. 11% reported no occupation. Considering adults of working age, 91% are farmers and a further 5% are farm workers. Of the remainder the occupations include business (9), “working” (8), teacher (2), driver (2) and thatcher (2). Individuals reported their occupations to be architect, bricklayer, guard, house builder, pump operator (of either the water supply system or possibly at the banana scheme), shop keeper and shop assistant. 706 adults reported an occupation, 673 of them said they were farmers or farm workers. The number of occupational fisherman was very low considering the proximity of the Zambezi (only 2). Probably most serious fishermen at the site join the lucrative fishing industry on Lake Kariba and are no longer resident in Lusitu.

Very few Lusitu residents are educated above grade 7, as shown in Figure 3-6. Over 700 persons did not report any educational level attained – one may assume that their access to education has been minimal.

Figure 3-6 Educational Grade Reported as Attained



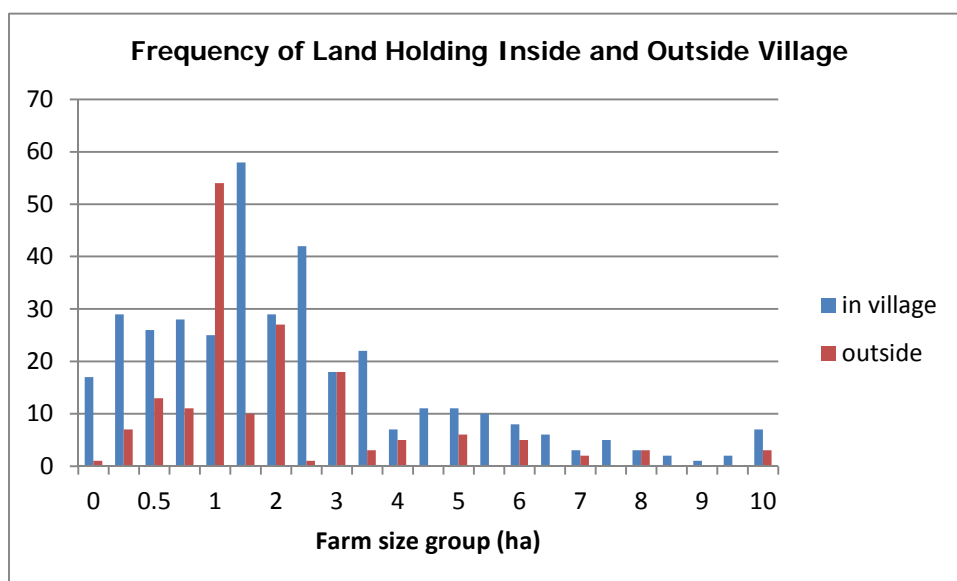
An unexpectedly small number of persons were reported as disabled in the census. Blindness or partial sight was the most common (7 individuals), followed by asthma (4). Individuals reported deafness, epilepsy, cancer and an amputation. One person was reported as “mental”, this might have been the judgement of an irritated enumerator.

3.2.2 Land Organisation

Given the dominance of farming in Lusitu, the degree of access to land and water determines the quality of life. Each household was asked questions about the area of land they had access to, the crops grown and the responsibility within the household for cultivation and disposal of those crops.

Respondents distinguished between their land holding inside the village and the land held “outside”, which was either on the Zambezi floodplain or in the western interior: two very different land types. About 25% of the land area claimed by respondents is outside what the residents consider to be their village area. Taking into account enumeration difficulties (the area of more remote land is reported less carefully) there appears to be very little difference between the two distributions: households with small land holdings in the village do not appear to be allocated land outside for example, which suggests holders of small land holdings are not marginalised by being allocated land outside. Many large land holders within the village area also have large holdings outside (see Figure 3-7). Regressing the area of land holding outside the village on land held inside (case by case) gives a highly significant R^2 of 0.83. This suggests that land availability is not critical in Lusitu – the largely benevolent customary system would ensure that if land was scarce those households with little land close to home and wanting more land would be allocated land further away, if it was available.

Figure 3-7 Frequency of Land Holding Inside and Outside Village



Land is divided into separate “parcels” for each household, within which “plots” are distinguished, on which different crops are grown. Some of these crops will be intercropped or double cropped, but the census was not able to distinguish such subtleties. The questionnaire asked respondents to distinguish a “garden” parcel followed by other parcels listed in order of their choosing. A summary of the responses is reported in Table 3-1. 72% of households have what was classified as a garden plot and all respondents claimed that their garden plot was “irrigated”, though it is difficult to conceive how an average parcel area of 0.58 ha can be irrigated without formal gravity or pumped supply² (but nearly 60% of garden plots were less than 0.25 ha).

Table 3-1 Holders' Parcel Areas

	Holders	Area, ha	Fallow, ha	Average ha	% of HH
Garden plot	274	158	0	0.58	72%
Parcel 1	354	643	21	1.82	93%
Parcel 2	92	187	16	2.04	24%
Parcel 3	30	40	1	1.32	8%

Parcels 1-3 were never reported as irrigated and intensity of use (defined by the variety and type of crop grown, see 3.2.3 below) consistently declined with ranking of the plot. Clearly, the number of parcels under the control of a household declined with the size of their total holding within the village area: only 8% of households had a Parcel 3 of significant area (over 0.5 ha) and these households all had a total holding size of over 1.5 ha. The area reported as “fallow” is probably more correctly described as unused or grazing land because the proportion on each parcel does not conform to any expected rotation system.

² Some households use the “Chico line” potable water supply for irrigation. The others use informal techniques to lift water from the Zambezi River and adjacent slacks.

3.2.3 Crop Areas

Bearing in mind it is usually not worthwhile to ask for accurate areas of cropped areas by recall, it was decided only to request parcel areas and ask the respondent to report plots (identified by crops grown) within it. The results show a large number of enterprises (crop types) reported for each parcel (see Table 3-2). The areas were derived by dividing the total number of enterprises reported in the parcel into the total parcel area. Some enterprises were not reported and no account was taken of the area reported as unused, so the areas are only approximate.

Table 3-2 Crop Enterprises by Parcel, net ha in 2012/2013

Enterprise	Garden	Parcel 1	Parcel 2	Parcel 3	Total
Fruit					
Bananas	0.1	1.0		9.0	10.1
Papaya	0.01				0.01
Fruit	0.3				0.3
Impwa	0.2				0.2
Vegetables					
Cabbage	0.6				0.6
Chinese cabbage	0.8				0.8
Cucumber		1.1			1.1
Eggplant	5.4				5.4
Green beans	1.2				1.2
Okra	84.7	2.3		0.5	87.5
Onion	0.4				0.4
Tomato	19.4	2.0			21.4
Vegetable	0.4		0.3		0.6
Watermelon	0.7	3.9			4.6
Peas	0.3	0.3			0.5
Pumpkin	5.6	9.4	1.7		16.7
Pumpkin leaves +	2.1	2.3			4.5
Rape	23.4				23.4
Sugar beans		0.3			0.3
Industrial crops					
Cotton		22.6	3.7		26.3
Oilseeds, pulses, roots					
Groundnuts		1.3		1.0	2.3
Sunflower		1.3			1.3
Gwa			0.2		0.2
Cassava leaves	0.1	1.0			1.1
Mung beans	0.1				0.1
Beans	2.3	2.3			4.6
Cow peas	0.3	0.2			0.5
Sweet potatoe leaves	0.7				0.7
Sweet potato		0.5			0.5
Cereals					
Maize	6.9	381.5	63.9	0.5	452.7
Millet	0.8	90.8	56.5	2.9	151.1
Sorgham	0.3	108.6	66.3	22.0	197.2
Total	156.9	632.7	192.5	35.8	1,017.9

The garden parcel is mostly cultivated with a wide variety of vegetables the most important of which are okra, tomato and rape. There are also small areas of maize. Parcel 1 is mostly in cereals, dominated by maize. Cotton is also a significant crop. Parcels 2 and 3 are also dominated by cereals, with the proportion of drought tolerant millet and sorghum increasing – plot 3 is almost entirely cultivated with sorghum. At 1,017 ha the total cropped area at the Lusitu site is almost double earlier estimates and nearly one quarter of the village area. Since the total cultivated area is in excess of the area reported as suitable for irrigation by the soil survey (within Sitinkwe village) this suggests that at least some of the land reported as sodic can certainly be used for rainfed agriculture: damaging salts are leached through the profile by annual rains.

In addition, there is a further 352 ha reported outside the village area, of which about 45% was said to be cropped in 2013, though the name of crops grown here was not asked for in the census. It is assumed that this land is also under the administration of Chief Chipepo: if not it would be too far (to the north and west) for villagers to access.

3.2.4 Control and Tenancy

Respondents were asked who “controlled” (defined as responsibility for provision of inputs and disposal for sale) each plot within the garden and parcels. The results are reported in Table 3-3. The results are incomplete, but it would appear that the partner(s) of the HHH tend to control about 15-20% of the total household plots. This conforms to the assertion in the Pre-feasibility study that women are allocated plots for their personal use.

Table 3-3 Reported Control Over Individual Plots

	Garden	Parcel 1	Parcel 2	Parcel 3
HHH	335	294	65	20
Spouse	75	40	1	5
Wife	9	4	9	1
daughter	1	1	2	0
grandmother	1	1	1	0
grandson	0	0	1	0
Not reported	1,162	1,069	321	0
Total	1,583	1,409	400	26

Respondents were asked how they viewed their occupancy status of each plot. The results are shown in hectares in Table 3-4. Very few “informal” tenancy arrangements exist – only about 5% of the parcel area is either rented or borrowed. 66% of respondents acknowledged their land was held on a customary basis, whole 16% claimed “ownership”. The distinction probably depends on the view of the respondent to his/her land rights under the customary system because none of the land in the village area is State Land.

Table 3-4 Reported Tenancy Arrangements Over Parcels

	Garden	Parcel 1	Parcel 2	Parcel 3	Total	%
Not reported	2	97	24	15	138	13%
Borrowed	9	6	0	0	16	2%
Customary	122	391	142	25	680	66%
Owner	21	130	14	0	165	16%
Rented	4	18	8	0	30	3%
Total ha	158	643	187	40	1,028	

3.2.5 Livestock Ownership

Livestock ownership is very important at the Lusitu site with 718 cattle, 1,167 goats and 200 sheep (only one owner reported sheep so this may be an error) recorded in the 2013 census. The area is in fact locally famous for goats due to its hot and dry climate.

About 15% of households own cattle, 26% own goats and 30% of households own both large and small stock. Overall the average head of cattle reported per household is 1.9 head and the average cattle holding for households that actually own cattle is 12.4 head per household. Overall the average head of goats reported per household is 3.0 head and the average goat holding for households that actually own goats is 11.8 head per household. This stock appears to be grazed mostly on common land: the land holding of all stock owners is 590 ha (42% of the total holding area) much of which is reported as cultivated and the number of Tropical Livestock Unit (TLU) is about 692. It was difficult to establish common grazing areas from the census but it appears that in the dry season the stock are grazed on the Zambezi floodplain and in the rains they are grazed on the terraces.

There is a strong correlation between the number of households in a residential area and the number of cattle, so it seems that cattle owners are well integrated spatially within the settlement area. There is a lower correlation between number of households in a residential area and the number of goats reported, so goat owners are more segregated and are found in the residential areas of lower population.

A very rough estimate of livestock productivity suggests that income from stock accounts for about one third of the value of net farm revenue at Lusitu (see the ESIA for details and the summary of this work in section 8.3). Livestock will remain one of the major livelihood activities after introducing irrigated agriculture. Integrating extensive livestock with irrigation is always a challenge, though in view of the relatively large area of irrigation practiced now in Lusitu it seems that farmers are rising to meet the challenge.

3.3 Identification of PAP Categories

3.3.1 Food Insecure Households

3.3.1.1 Food Security Status

The crop areas reported in Table 3-2 are known by household. Areas in the garden plot and parcels were summed to give the total area cultivated for each household by crop. An estimate of crop yields at Lusitu is available from the Engineering Pre-Feasibility Study and Socio-Economic Baseline Survey for Lusitu: Agronomy and Farming Systems Annex (IDSP 2010: the earlier work was used because a formal

baseline survey was not carried out in the later feasibility study) and the calorific value of crops expressed in kcal/ton is available from FAO's Food Balance Sheet for Zambia, 2009 (the most recent available on the FAO website). Using this information it is easy to calculate the vegetable food energy production of each household farm. The challenge is to disaggregate household production between what is eaten and what is sold.

The Food Balance Sheet for Zambia provides the data to construct a daily diet for the Zambian citizen, noting that food consumption patterns are different between the urban and rural population, Zambia is comparatively urbanised and therefore the daily diet will not necessarily reflect Lusitu consumption habits³. The numbers of people per household are known and therefore it is easy to calculate the total food energy requirement per annum of each household and (from Table 3-5) the percentage satisfied by cereals, roots, pulses, oilseeds and vegetables that are cultivated on-farm. These dietary components can be given an approximate market value expressed in ZMW per million kilocalories. Note the very high value of fruits and vegetables expressed in this way: low calorific content but high market price per ton.

Table 3-5 Daily Diet and Computed Value of Farm Production

	kcal/day ^{1/}	% of daily intake ^{1/}	m kcal/ton ^{1/}	Kwacha/ ton ^{2/}	Sales/purchase price in Kwacha/mkcal
Cereals - Excluding Beer	1,085	58%	3.073	1,200	391
Starchy Roots	302	16%	1.073	1,500	1,398
Sugar & Sweeteners	101	5%	3.527		
Pulses	21	1%	3.363	3,000	892
Oilcrops	79	4%	4.586	4,500	981
Vegetable Oils	122	6%	8.853		
Vegetables	21	1%	0.250	4,000	15,995
Fruits - Excluding Wine	11	1%	0.402	4,000	9,944
Stimulants	2	0%	1.327		
Spices	4	0%	3.715		
Alcoholic Beverages	31	2%	0.402		
Meat	55	3%	1.637		
Offals	3	0%	1.072		
Animal Fats	8	0%	7.431		
Eggs	10	1%	1.191		
Milk - Excluding Butter	13	1%	0.554		
Fish, Seafood	11	1%	0.672		
Miscellaneous	1	0%			
Total	1,880	100%			

Sources:

^{1/} http://faostat3.fao.org/faostat-gateway/go/to/download/FB/*/E

^{2/} <http://www.farmprices.co.zm/>

With this information it is straightforward to subtract household demand and household production of cereals, roots, pulses, oilseeds and vegetables expressed in million kilocalories and value the balance. "Net sales of crops" will result from a positive balance, "net purchases of food" from a negative balance. Subtracting purchases from sales gives an estimate of farm gross revenue after all household

³ It is likely for example that calorific demand in starchy roots is substituted by cereals in view of the apparently small area of cassava, sweet potatoes etc. cultivated at the site.

food consumption has been satisfied, and the balance must be allocated to the cost of purchases of inputs (to manage the farm) and the cost of non-food household requirements.

Farm gross revenue after consumption was negative in 138 households (36% of households), indicating that farm operation and other household expenses must be subsidised from other livelihood activities. Only 14 households reported paid occupations (see section 3.2.1) and of these households only three had negative farm gross revenue after consumption which could conceivably be subsidised by formal employment. The remaining 133 households would presumably rely on labouring (probably casual agricultural labour on other farms) for the additional income required. The data from the census tends to support the contention of the District authorities that about one third of the population in the Lusitu area is food insecure, an estimate which was also supported by the Pre-feasibility Study Baseline Survey. The average farm gross revenue per capita for all households was only ZMW 1,050 per annum.

Completely landless households are rare in Lusitu: the census data counted only 17 households that reported zero garden and parcel areas⁴ and it is highly likely that this area data is simply missing rather than nil.

3.3.1.2 Characteristic of Food Insecure Households

The main explanatory variable of food insecurity is of course access to land. An ANOVA of the mean holding size of those households classified as food insecure (138 cases) is 1.54 ha, the mean holding size of the others (243 cases) is 4.91 ha (df=380, F=74.3), a difference which is obviously statistically significant. This is of course nothing but a truism – the reasons behind lack of access to land are more interesting. Table 3-6 gives the results of ANOVAs carried out to test the significance of differences between the means of possible explanatory variables. The key explanatory variables for access to larger areas of land are being older (both HH and HHH), being married (more important than being polygamous), being male and being more educated. In short, attributes which are likely to appeal to the leaders of a traditional agrarian society.

Table 3-6 Factors Influencing Estimated Food Security Status

	unit	Mean		df	Fstat	sig. level
		Insecure	Secure			
Size of holding	ha	1.54	4.91	380	74.3	99%
Number of wives	number	0.56	0.7	380	5.2	95%
Education of HH	grade	4.5	5	343	6.1	95%
Education of HHH	grade	5.3	6.1	305	6.1	95%
Age of HH	years	22.2	25.4	377	3.9	95%
Age of HHH	years	40	43	358	4.1	95%
Sex of HHH		0.57	0.7	380	7.6	99%

Notes

Sex of HHH: males are classified as 1 in the data, females as 0, so a higher mean indicates a greater proportion of males.

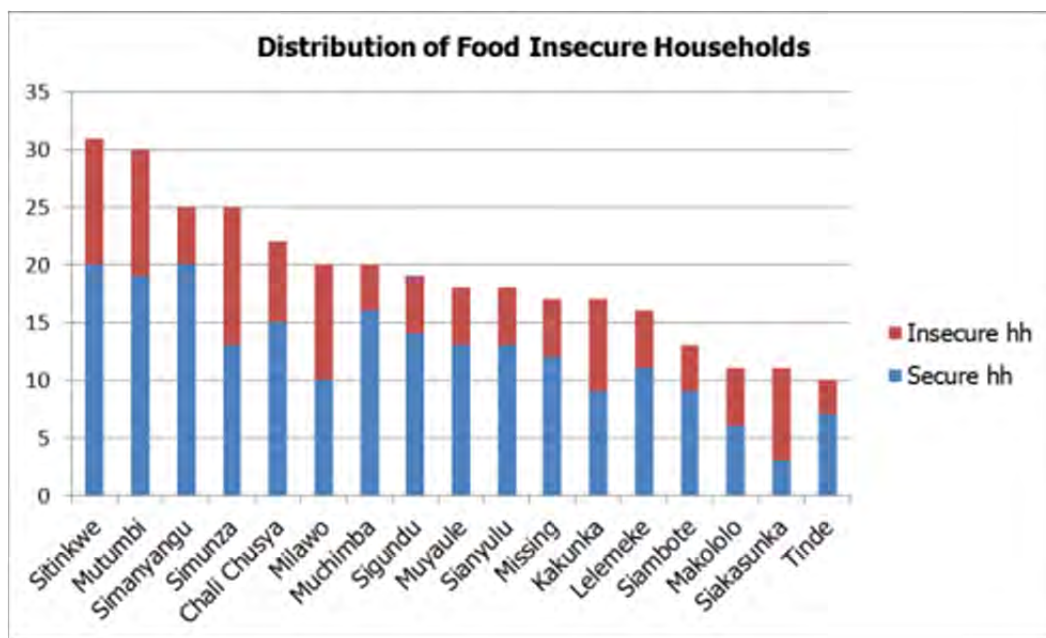
Education level of HH is the average Grade achieved by HH members

Age of HH is the average age of HH members

⁴ Only one respondent said she had no land inside the village but did have access to land outside, so geographical marginalisation of households does not appear to occur.

The possibility of geographical segregation of food insecure households was tested and rejected, see Figure 3-8. These households can be found in much the same proportion in all the reported zones of residence, so it is possible to conclude they are spatially well integrated into the community.

Figure 3-8 Location of Households Estimated as Food Insecure



Finally, a regression model was prepared to explain access to land. This is challenging because many independent variables are auto-correlated. The best explanatory variables for the total area allocated to the household are family size, number of wives (note that it is being married which counts most, not having more than one wife), the number of TLU owned by the household and the average school grade achieved by household members. The R^2 was 0.31 with $df=150$ and $F=16.30$. All the beta coefficients are significant. The results are reported in Table 3-7. Note that within the population an increase in family size by one member will lead to an increase of holding size of 0.25 ha, being married or having an extra TLU will do about the same, and an increase of the average grade of education in HH members will lead to an extra 0.14 ha.

Table 3-7 Explanatory Variables for Area of Farm Holding

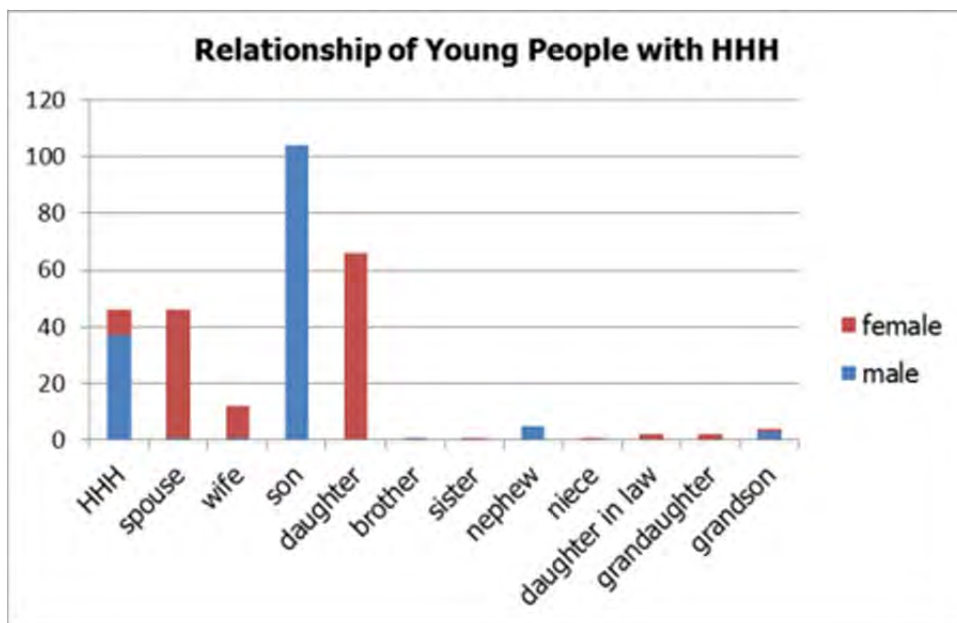
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.83	0.87		-0.95	0.35
Family size	0.38	0.11	0.25	3.45	0.00
Number of wives	1.87	0.62	0.23	3.00	0.00
Total TLU	0.11	0.03	0.26	3.65	0.00
Grade of education	0.29	0.15	0.14	1.91	0.06

Dependent Variable: TOTHOLD

3.3.2 Youth

There are 291 people between the ages of 16 and 25 included in the census (16% of the population). Their relationship between their acknowledged HHH is shown in Figure 3-9. 37 males and 9 females are already classified as HHH. Another 58 are classified as “spouses” or wives and can also be considered as established. There are 113 other young males who may imminently marry and establish HH of their own: a potential increase in HH numbers in Lusitu in the next few years of 23%. This dynamic should be considered in allocating irrigated plots.

Figure 3-9 Young People and the Relation to HHH



A possible approach might be a “youth irrigation allocation” which is transferable on marriage. The community (through the Cooperative Land Trust) may decide to impose conditions, for example:

- Allocations available only to unmarried persons in the age group of 16-24 who are members of existing households;
- Male and female youth will be equally eligible;
- The allocation will be assigned for a period of two years;
- If during that time the holder marries, the allocation will be transferred to the name of the new household (in joint names);
- Failure to develop the allocation will lead to its re-allocation to another youthful member of the community;
- Unmarried persons may not hold a youth allocation after the age of 25; on reaching this age the allocation will be re-assigned to another eligible youth.

This recommendation will mitigate the effect of population pressure on the investment, allow younger people to access training and practical experience in irrigation and also allow a good proportion of irrigation allocations to be managed by energetic and possibly innovative youthful people. This of course is not a panacea: the long term solution for land shortage is increased farm productivity and urban employment opportunities.

3.3.3 Polygamous Households

According to the census data, there are 27 women living as wives in 12 polygamous households. A suggested option long-mooted by IDSP is that polygamous wives should each receive an irrigation allocation. The RAP census in 2013 suggested that polygamy was not as common as previously reported (only 12 households rather than 44 counted in 2011). The census is probably in error in this respect, with individual women in polygamous marriages reporting themselves as a separate household and therefore indistinguishable from widowed and divorced female-headed households. This does not matter – such women will still be entitled to an irrigation allocation in their own right. However, the issue of reported polygamous households still needs to be addressed.

Examining the number of HH members in which these wives live (Table 3-8) it is clear that the three wives living in a HH of four people (if it is true!) would be unable to operate irrigation allocations independently. Neither is it likely that the four wives living in two households with five members could manage, though this would require further study. The 20 wives living in nine households with more than 6 family members may be able to do so, but the allocations would have to be minimal. Since the first draft of this RAP it has been suggested that the minimum irrigation allocation would not have to be as large as 0.25 ha (one lima) but a unit as small as 625m² (one quarter of a lima) could be operated independently. This very small management unit provides a very good opportunity for access to irrigation by resource-poor households. The opportunity will be explored further in section 8.4.

Table 3-8 Affiliations of Wives in Polygamous HH

Family members	HH with 2 wives	HH with 3 wives	Total HH	Total wives
4		1	1	3
5	2		2	4
6	2		2	4
8	2		2	4
10		1	1	3
11		1	1	3
12	2		2	4
15	1		1	2
Total	9	3	12	27

An alternative solution to the IDSP option may be to establish “wives’ plots” to be shared by all the wives in a polygamous family. It is doubtful if two wives of the same family could manage 0.25 ha, maybe three could; the matter requires more study.

3.3.4 Female-headed Households

There are 132 female-headed households reported in the census, or 35%. As remarked above, some of these households are likely to be headed by polygamous wives, the male spouse being reported in another household. Nevertheless, this is an important proportion the characteristics of which should be known. Referring to Table 3-9, in female-headed households food insecurity is more prevalent and both

the size of holding and the household is smaller. Female HHH are older and less well educated than male HHH and have older and less well-educated family members. Female HHH own much fewer TLU⁵.

Table 3-9 Variance of Mean HH Characteristics: Female and Male HHH

	unit	Mean		df	Fstat	sig. level
		Female	Male			
Number	no.	132	250			
Food insecure	%	46%	31%			
Size of holding	ha	2.48	4.33	380	19.2	99%
Age of HH	years	48	39	357	29.3	99%
Age of HHH	years	29	22	376	21	99%
Education of HH	grade	4.4	6.4	305	35.4	99%
Education of HHH	grade	4.1	5.1	342	23.8	99%
Ownership of TLU	no.	1.17	4.41	164	3.9	95%

Notes

Education level of HH is the average Grade achieved by HH members

Age of HH is the average age of HH members

There should be no question that female-headed HH are equally eligible to an irrigation allowance as male headed HH. However, they share many characteristics with food insecure HH and should be treated similarly when allocating irrigable land (see section 8.4 for more discussion).

⁵ Women are not allowed to own cattle in Tonga society, only small stock and chickens. However as widows they may retain user rights to land and ownership of fixed assets accumulated when they were married.

4 DEFINITIONS AND ELIGIBILITY CRITERIA

4.1 Definitions

“Households” are groups of people self reported as “sleeping and eating together”. This is the standard CSO definition of the household and accepted for all surveys and censuses carried out in Zambia. Because CSO field teams collected census data the definition was strictly adhered to. A complication arises with polygamous wives who live with their children by the husband, but often with other relatives. Following the CSO definition, these households were reported separately. Since IDSP had already publicised the possibility of polygamous wives receiving an irrigation allocation in their own right, it was in the interests of polygamous wives (and, usually, their husbands) to declare themselves as a separate household. This gives rise to an abnormal number of female-headed households. It was then necessary to disaggregate these into those in polygamous relations and those who were who were female household heads for another reason, for example divorcees and widows. This proved to be complicated but possible, as described in section 3.3.3 and section 3.3.4. Households are the basic social units that will receive irrigation allocations, compensation for fixed assets within the irrigation scheme and alternative plots for rainfed cultivation presently within the irrigation scheme.

“Asset holders” are those who reported themselves to MLGH Valuation Department as controlling fixed assets within the area designated to irrigation development or for inundation. Asset holders are identified according to the RICS Code of Measuring Practice as recognized by the Surveyors Institute of Zambia (SIZ). They are not necessarily household heads (though most are), they may be sons, second wives etc. The recommended method of compensation is by household (a household which suffers a loss of a house or houses within the area designated to the irrigation blocks will be entitled to compensation of only one new house, see section 4.2) so each of those asset holders had to be linked to his or her household. Clearly every asset holder must belong to an identified household, because all households in the village are identified. If there are two or more asset holders associated with one household, then that household is still entitled to only one house. The asset holder with the lowest value of fixed assets is entitled only to

the compensation of the value of those fixed assets as valued by Valuations Department.

“Land holders” on customary land are those with dispensation for land use that can be traced to the Chiefdom in which the customary land is located. The dispensation may be issued on behalf of the Chief by his administration, typically village headmen. The village headman can indicate land (cadastral) boundaries in the field, together with the name of the land holder. The headman however cannot assist the land surveyor to survey those boundaries exactly. Headmen allocate areas but boundaries are fixed by practice between neighbours. The boundaries on the cadastral map (section 4) are therefore approximate. Within the areas allocated by headmen, the land holder distributes plots for use by not only himself, but also other members of his or her household, and possibly others that have a claim to land use. It is impractical to map these areas. The term “land holder” does not have significance when considering future irrigation allocations – this will be done by household – but is significant to identify existing cultivators in the area designated for future irrigation as persons who may be eligible to be allocated a rainfed holding outside the scheme (if such land is available) at the discretion of the Chief’s administration.

This report has identified “vulnerable groups” which may need special consideration in the allocation of irrigated plots. These groups include youth and polygamous wives. Classification as “vulnerable” has no legal standing and the community will be the ultimate arbiter of who farms what areas on Tier 1 land. Nevertheless, benchmarking the vulnerable allows a more focussed consideration by the community in making allocations and assists in later monitoring and evaluation of the distribution of benefits from irrigation.

“Displaced households” are households resident in the area scheduled for development (the irrigation blocks and areas scheduled for irrigation infrastructure). These households will be subject to involuntary resettlement. Their rights to land are protected under customary law and the norms of the Chief’s administration (see section 5.1.1). Their rights to private property are protected under the Constitution (see section 5.1.2.2). The Environmental Impact Assessment Regulations (1997) and World Bank’s Operational Policy on Involuntary Resettlement (OP 4.12) give guidance on the treatment of those subject to involuntary resettlement.

“Affected farmers” are those with control of land within the development area but not living within it. Control means they have user rights to the land allocated by the Chief’s administration. Note they may choose to sub-let or dispose of this land, typically for use by members of their clan or family.

“Project Affected Population (PAP)” and “affected households” refer to those within the project area that will be affected by the Lusitu and Irrigation Project. “Affected” people may or may not be displaced.

The “development area” is the area as designed to be irrigated in the Engineering Feasibility Study, March 2014, or the resettlement areas identified by this RAP. This includes all associated infrastructure (farm roads, reservoirs, pump stations etc.) that may not be within the irrigation blocks or resettlement areas.

The cut-off date of the RAP is 5th July 2013: no new entrants to the scheme are permitted without special consideration of the community and the Resettlement

and Compensation Committee. The community is aware of the significance of the date, which was drawn to their attention during community consultation (see section 11.1).

4.2 Eligibility Criteria

The principles of entitlement and compensation for loss of assets and access to customary land (on which the Lusitu community is entirely situated) were agreed after taking into account advice from World Bank and subsequent instruction from IDSP/MAL (IDSP Coordination Meeting 17th May 2013) and are summarised as follows:

- On customary land within the blocks designated for irrigation development no land will be taken out of community control⁶. Instead, all eligible community members⁷ will receive:
 - Perpetual sub-lease of irrigated land on Tier 1 land provided through the Community Land Trust⁸;
 - and/or (for suitably qualified farmers) sub-lease of irrigated land (held jointly with other cooperating farmers) on Tier 2 land provided through the Community Land Trust;
 - and the traditional customary user right on the remaining land suitable for rainfed cultivation outside the irrigation blocks which takes account of the allowances received. This user right will be equitably⁹ distributed but will not exceed the area suitable for rainfed cultivation both within the project area and outside the irrigation blocks. This land will remain as customary land administered by the Chief.
- Customary users of cultivated and fallow land permanently taken up by major project infrastructure (e.g. reservoirs) will share in the land re-distribution procedure described above.

⁶ Tier 3 land will be leased to FarmCo by the Community Land Trust (see footnote 8), Tier 2 will be farmed by groups of community members (who may pay rent to the Community Land Trust) and Tier 1 will be farmed by individual community members.

⁷ "Eligible community members" will include land users not resident in the project area but with a dispensation from the Chief/village headman to practice farming unless that dispensation is nullified before the RAP survey "cut-off point" (the RAP census which was completed on 5th July 2013). All eligible community members will be allied to the Community Land Trust (see footnote 8).

⁸The irrigation allocation at Group 1 schemes on customary land would be made through the Community Land Trust. As a legal entity the Community Land Trust can then take a 99-year head lease on its own land after due process to convert from customary to state land. The Community Land Trust may then sub-let land in perpetuity, not only to community members (Tier 1 and Tier 2) but also to the private sector including the Tier 3 operator (FarmCo). Sub-leases to community members will be in line with general principles and protections acceptable to the World Bank, including at a minimum, limited termination rights of the lessor and continuation of lessee land rights in case of failure of CLT. These basic principles applicable to membership rights can not be modified unilaterally by the CLT.

⁹ "Equitably" implies taking into account present landholding size, household size (to ensure sufficient labour is available to work the farm) and the size of the irrigated holding to be allocated in future. The combination of productive potential locational advantages, and other factors of the irrigation allocation and rainfed land (re-)allocation is at least equivalent to the advantages of the land taken.

- Customary users of commons land (grazing, fuelwood, forest products etc.) permanently taken up by major project infrastructure will be compensated through the mandatory allocation of equivalently adequate grazing land.¹⁰
- Compensation for re-located housing of users of customary land will be based on replacement. Houses will be constructed for those households whose dwelling places are presently within irrigation blocks. Houses will be constructed based on standard government rural housing designs. The location and design of required housing will be specified in the detailed design of the scheme, tender documents will be prepared and construction will be carried out under a separate contract and be completed before irrigation scheme construction begins. The CLT will hold the head lease valid for 99 years and the individual entitled PAP's will be offered tenure arrangements in perpetuity (in line with general principles and protections acceptable to the World Bank, including at a minimum, limited termination rights of the lessor and continuation of lessee land rights in case of failure of CLT).
- All re-located housing will be provided with reasonable access to basic services including potable water, health and education facilities.

The process of allocating the rainfed cultivation allowance described above is likely to be extremely challenging. It is however essential to carry it out in an orderly and transparent way in order to safeguard the interests of individual land users in the project area. The process is envisaged as follows:

On customary land, land users farming partly or entirely inside the areas designated to irrigation blocks will lose access to some or all of their rainfed land. In return they will have to be:

- Allocated irrigation land rights within an accessible block and an appropriate Tier (therefore not necessarily in the same block as their present rainfed area falls);
- Allocated an equivalent area (less the above irrigation land rights expressed in rainfed land equivalent) of presently unused suitable land outside the irrigation blocks;
- Or, if none or insufficient presently unused suitable land exists, take a share of the rainfed land of land users outside the block, which must also be accessible.

At the same time, land users with all their land outside the areas designated to be irrigation blocks will have to be:

- Allocated irrigation land rights within an accessible block and an appropriate Tier;
- Give up some of their rainfed land to land users who have lost rainfed land inside the irrigation blocks or resettlement areas if presently unused suitable land outside the irrigation blocks is insufficient (with the understanding that such land users giving up land will in turn receive a combination of rain fed land and irrigated land in compensation for and of equal productive value as the land given up). This process will be handled by the CLT and local village headman.

¹⁰ Users of common land may include graziers and other users from outside the communities in the project area if their use is acknowledged by community members.

This procedure describes the aggregate re-distribution of land between all land users at present partly or entirely inside the irrigation block areas and all land users outside. In practice many individual exchanges will have to be made at each site that take into account access and land quality. The procedure will therefore be complicated.

If done correctly there are substantial overall gains to each household from having both a rainfed allocation and irrigation block allocation and the overall benefits to the area are fully recognized and supported by the entire community. Nevertheless people are allowed to opt-out if they choose not to participate and will be compensated accordingly in kind.

In order to protect the interests of individuals on behalf of IDSP it will be necessary for CP&CB Provider to monitor the re-allocation of land both outside the irrigation blocks as well as inside. Cadastral data (both precise areas and precise locations) would ideally be required for every land user (both resident inside and outside the project area) on their areas of cultivation and fallow both within and outside the area to be developed for irrigation. This would require a cadastral survey of the entire project area, rather than only the areas allocated to irrigation development, in other words about 2,000 ha (the entire Lusitu cultivated area including the area cultivated on the Zambezi floodplain) of cadastral survey rather than 270 ha (the area to be irrigated. This was an unexpected requirement, and only for the area allocated to irrigation development a cadastral survey was carried out as indicated in both the Consultant's ToR and Inception Report:

“Carry out, with the assistance of the PPSC, a cadastral survey of the affected community's land to identify ownership of all land that will be affected by development of the subproject so as to establish land acquisition, resettlement and compensation needs.” (Terms of Reference of the CP&CB Provider, item 35 (a) vi).

“The RAP will be confined to the Total Feasibility Study Area...” (CP&CB Provider's Inception Report, page 9).

Nevertheless, the Consultant in conjunction with Land Husbandry Department of MAL understood the technical importance of the increase in scope of the cadastral survey and attempted to respond within the time and budget available, though at the Lusitu site particularly it proved difficult to comply because of the intricate allocations of land within the customary system.

The same caveat equally applies to the re-allocation of rainfed land outside the irrigation development area, where at all sites the accessible resource (in terms of location, quality and present use) is scarce. Through the preparation of this report the Consultant provides data and recommendations to Government and will of course respond to any requests for modifications. Responsibility for implementation must however rest with the civil authorities concerned.

4.3 Entitlement Matrix

The Entitlement Matrix is outlined in table 4-1 in four categories of PAP's as follows:

- Category 1: Customary land holders presently residing inside irrigation blocks or resettlement site.(84 households);

- Category 2: Customary land holders presently residing outside irrigation blocks or resettlement site but with rainfed land inside (71 farmers);
- Category 3: Customary land holders presently residing outside irrigation blocks or resettlement site but having to give up part of their or all of their present rainfed or irrigated parcel to those displaced in Category 1 and/or 2 (dependent on allocations made by the Chief's administration).
- Category 4: Common properties

Table 4-1 Entitlement Matrix

Category No	Category of PAP	Type of Loss	Compensation for loss of structures	Compensation for loss of land	Compensation for loss of income	Disturbance allowance	Other assistance
1	Customary land holders presently residing inside irrigation blocks or Resettlement Site	Loss of fixed assets at HH site (housing, storage, water supply, economic trees, hedges) as specified and valued by Valuations Department	Compensation based on replacement cost. New house of adequate accommodation to be constructed by ISDP in agreed location with adequate access to services and utilities. Adequate kitchen structure will be rebuilt by ISDP. Relocation support to transport furniture and salvage materials. Additional cash compensation provided if fixed assets valued at more than value of newly constructed house	Allocation of new plot of 0.8 ha per HH on CTL land outside irrigation plot with a perpetual sublease ¹¹ with CLT	Loss of income from fixed assets of additional livelihood activities related to HH site (shop, beer, brewing, etc. will be valued by Valuations Department and included in GRZ compensation rates	Disturbance allowance will be determined and paid as a lump sum	Road access and water supply improved as part of detailed project design
		Loss of rain fed parcel inside irrigation blocks or Resettlement Site	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, etc..) as valued by Valuations Department	Allocation of land of equal of higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks area either as customary land; and (2) allocation of 0.8 ha of rain fed land near dwelling (minus housing footprint); and (3) allocation of irrigation plot within Tier 1 [with perpetual sublease through CLT ¹	Any interim loss of income from loss of rain fed prior to new land being productive	Credit assistance (equipment, inputs) to begin irrigated farming and support from agricultural extension services	
2	Customary land holders presently residing outside irrigation blocks or Resettlement Site but with rainfed land inside	Loss of rain fed or irrigated parcel inside irrigation blocks or Resettlement Site	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, etc..) as valued by Valuations Department	Allocation of land of equal of higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks area as customary land; and (2) allocation of irrigation plot within Tier 1 with perpetual sublease through CLT ¹	Any interim loss of income from loss of rain fed or irrigated land prior to new land being productive	Credit assistance (equipment, inputs) to begin irrigated farming and support from agricultural extension services	

¹¹ Perpetual sublease reflecting general principles and protections acceptable to the World Bank, including at a minimum, limited termination rights of the lessor and continuation of lessee land rights in case of failure of CLT). These basic principles applicable to membership rights can not be modified unilaterally by the CLT.

Category No	Category of PAP	Type of Loss	Compensation for loss of structures	Compensation for loss of land	Compensation for loss of income	Disturbance allowance	Other assistance
3	Customary land holders presently residing outside irrigation blocks but having to give up part of or all of their rainfed to those displaced in Category 1 or 2	Loss of all or part of rainfed due to reallocation to PAP in Category 2	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, etc..) as valued by Valuations Department	Allocation of land of equal of higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks as customary land; and (2) allocation of irrigation plot within Tier 1 or Tier 2 (as appropriate)with perpetual sublease through CLT ¹	Any interim loss of income from loss of rain fed or irrigated land prior to new land being productive will be valued by Valuations Department and included in GRZ compensation rates		Credit assistance (equipment, inputs) to begin irrigated farming and support from agricultural extension services
4	Common property	Grazing land		Equivalent land for grazing to be provided			

In respect of the irrigation allocation in Tier 1, the intention is that land allocated to families in Tier 1 will be held in perpetuity to reflect their present customary user rights. However, title will not be given: this right will be enshrined in the Community Land Trust Agreement, along with a clause which qualifies the right with the obligation to irrigate and pay any water charges that accrue to the irrigation allocation. Re-allocations of rainfed land outside the Tiers will remain in customary use and have corresponding rights and obligations on the part of the new user under the jurisdiction of the Chief.

On customary land, users are entitled to compensation for the value of inputs used and standing crops damaged or destroyed during the re-settlement process. This cannot be factored in to the entitlement matrix because the crops are not yet planted that may be affected during implementation. Only fixed assets related to the parcels (temporary storage, bird scaring platforms, fixed irrigation equipment etc.) can be valued at present.

In summary, PAPs will receive all the direct benefits that an irrigation allowance will bring, including substantially enhanced net farm income, food security and flexibility in cropping pattern to respond to market conditions. They will also receive fringe benefits associated with the scheme including access to the Investment Support Fund, support from the Tier 3 operation (input supply, extension, marketing opportunities) and general economic development (value added operations). PAPs that are negatively affected by the scheme (those who have to re-locate their house plot or rainfed farming operation) will be compensated with a house and separately built kitchen structure (House and kitchen structure are Government rural standard design) and house plot (to which entitlement documents will be provided by the Community Land Trust), a disturbance allowance and compensation for perennial crops. Small and temporary structures (chicken runs, grain stores, kraals etc.) will be held to be compensated by the allocation of a house.

5 POLICY, ORGANISATIONAL AND INSTITUTIONAL FRAMEWORK

5.1 Applicable Laws and Regulations

5.1.1 Laws and Regulations Related to Land Tenure

5.1.1.1 Land Tenure and IDSP

Land reorganisation will be crucial to the implementation of the Lusitu Irrigation Project. Obviously it is important that those households presently living and/or farming in the area of the irrigation blocks are moved for reasons of technical efficiency in operating the irrigation scheme, but IDSP seeks not just technical efficiency but a fundamental change in the land occupancy relationships. The basic relationship between Government, Scheme Operator, commercial farmers and smallholders is governed by PPP principles that allow risk and incentive to be distributed through commercial contracts for defined services. One very important contract will be between smallholders (the community) and commercial farmers to allow the latter use of community land for a period defined through a lease. Leases require exchange of title over an area of land with surveyed coordinates; customary tenure can provide neither of these criteria. For the IDSP irrigation schemes to function as envisaged it will be necessary to convert customary land into statutory tenure.

5.1.1.2 Summary of Zambian Land Law

The colonial government created "Crown land" in the 1940s for use of the white settlers and miners and from which native Zambians were excluded: this was the best land in terms of land quality and location. All the rest was classified as "Reserve Land" for use of native Zambians. "Crown land" was converted to State land in the 1950s and reduced in area because white settlers did not take up Crown land as expected. The land taken out of Crown Land was converted to "Trust Land". Both "Trust Land" and "Reserve Land" were subject to customary law under the authority of the chiefdoms but "Trust Land" could be leased to both

Europeans and Zambians. For a brief period In the 1950s good farmers were allowed to apply for freehold, but this was repealed in 1960.

During the 1960s the main land problem facing the country's administration was the existence of vast areas of under-developed and unutilised land. This land was also very expensive to obtain for most Zambian citizens. An amendment to the Constitution in 1969 allowed the State to acquire this land for development purposes, for example by the creation of agricultural settlement schemes. Then in the 1970s through the *The Land (Conversion of Titles) Act* 1975 UNIP introduced some fundamental policy changes intended to make land use more productive and accessible. These included:

- Introducing the notion that bare or undeveloped land has no value (by limiting the value of land to the buildings and infrastructure on it) so eliminating the value fixed by demand, location, or potential use value;
- Vesting all land in the President on behalf of the people;
- Converting all freehold land to leasehold for 100 years;
- Allowing the State to take over unutilised land.

But the laws governing granting of Reserve and Trust land were not repealed, so the use of these lands continued under colonial laws but were administered under customary law.

Since the 1980s the policy has been to try to integrate the Chiefs into the Government administrative system, by making them statutory members of District Councils and requiring that the consent of the chief must be obtained before an application of leasehold on Customary Land (maximum 250 ha) could be approved. *Administrative Circular No. 1* (1985) describes the procedures for taking out a lease on both State and customary land that are still in force today and regulated by the *Land (Conversion of Titles) Act*, that provides for the alienation, transfer, dispossession, and change of use of land and the *Land Survey Act* that provides for the surveying of lands and properties before they are numbered, allocated and registered. The regulations that must be followed under these acts are described below.

Under multi-party democracy in the 1990s policy changed to encourage privatisation of land through a land market. This was in the context of “structural adjustment” of developing economies and driven by donor agencies, especially the IMF and World Bank. The *Lands Act* (1995):

- Made it easier to get leases;
- Strengthened the rights of property owners;
- Reduced the rights of “squatters”, even those who may have lived in a place without title for years;
- Allowed land to have its full (market) value;
- Restricted the right of the State to land repossession, even though the land may remain undeveloped;
- Established the Land Tribunal;
- Allowed the “Reserve Land” and “Trust Land” to be converted from customary land to State land by applying for a 99-year lease.

The most recent piece of legislation about land is the *Lands Tribunal Bill* (2010) that continues the existence of the Lands Tribunal and gives it more resources.

The Lands Tribunal never functioned as intended because of lack of resources and inaccessibility for most people. This is likely to continue.

5.1.1.3 Land Delivery Processes

To achieve the resettlement requirements of IDSP much more is intended than just moving households from an area to be developed for irrigation. The project seeks to re-establish the whole beneficiary community on State Land on which the community retains full control in the eyes of the law (a 99-year lease). The community can then enter into contractual relationships for land development. The security of displaced households is thus very dependent on the success of this conversion (or delivery) process.

The customary land delivery system for development use is as follows:

- The prospective developer approaches the Chief of the area for consent to hold land on leasehold tenure and obtain certificate of title;
- Where the Chief is satisfied that the land being requested for is available (unoccupied), s/he writes a consent letter to the office of the Council Secretary, with the lands location site plan, drawn by the local planning authority attached;
- The Chief's consent letter and attached site plan are taken to the relevant Council Secretary who endorses and stamps the documents;
- The Council Secretary arranges for the land in question to be inspected by a committee which deals with land matters in the area;
- The committee interviews the applicant;
- If the applicant is successful, the Council Secretary brings the application to the full council for consideration;
- If the council approves the application, they will recommend to the Commissioner of Lands the allocation of the unnumbered plot to the applicant;
- The application forms, site plans and council minutes are attached to the recommendation letter. This certifies that the recommended plot is free of settlement by other subjects in the jurisdiction of the Chief.

The State Land delivery process is different, but needs analysis here because once customary land is delivered to State land it becomes subject to this process. The authority delegated by the President to take charge of the delivery process is the Commissioner of Lands. The Commissioner's agents to plan the land and select candidates for certificate of title are the District, Municipal, and City Councils. These agents use the *Town and Country Planning Act* to plan the land in their areas in their capacities as planning authorities. The Town and Country Planning Act Number 283 provides for Ministerial powers to appoint planning authorities to prepare structural, regional, integrated development, and layout plans to guide physical urban and rural development in Zambia. The Act also provides for the control of development and sub-division of land in stakeholders areas. Once the Council has planned the land use, they are then surveyed as per the *Land Survey Act* and then delivered to users by the Council using powers vested in them under the *Local Government Act: CAP 281* provides for the system of local government administration in Zambia at city, municipality and district council levels. Each level has delegated statutory functions with respect to development planning and participatory democracy.

Successful applicants who pass through this process end up with a 99-year title deed to the land. Partial success results in a certificate issued by the Council but

unapproved by the Commissioner of Lands: such a certificate does not provide sufficient legal grounds to demonstrate title.

In detail, the system to acquire titled land from state land is as follows:

- The District, Municipal or City Council identifies an area for which a layout plan is made, subdividing the identified land into several plots. In the case of agricultural land, the relevant departments in the Ministry of Agriculture and Cooperatives and the Resettlement Department under the Vice President's office are responsible;
- The layout plan is endorsed and stamped by the appropriate planning authority that later transmits the endorsed plan to the Lands Department for scrutiny and verification of the planned lands availability;
- If the planned land is available, the plan is approved and transmitted to the Survey Department for surveying and numbering as per the Land Survey Act;
- Upon receipt of numbered and surveyed plots, the relevant authorities advertise them to the public after which applicants are interviewed;
- Selected applicants are recommended for further consideration and approval by the office of the Commissioner of Lands, who is the final authority to grant title to land;
- If satisfied, the Commissioner of Lands approves the application. For land in excess of 250 hectares, the Commissioner of Lands is required to seek clearance from the Minister of Lands before approval.

5.1.2 Laws and Regulations Related to Valuation and Compensation

5.1.2.1 Land

The principle being that all land now under community control as customary land will be transferred to statutory land with a 99-year lease in the community's favour. The community will therefore be the leaseholder of the land on which irrigation infrastructure is built. Nevertheless, the land itself will belong to the State, and so will the infrastructure. Should the State wish to reclaim it, it could follow the applicable laws relating to land valuation and compensation.

Under the *Lands Acquisition Act*, the value of the statutory land for purposes of compensation shall be the value of the amount that the property might be expected to realize if sold on the open market by a willing seller at the time of the publication of the notice to yield up possession of the property. Section 11 of the Lands Acquisition Act provides for the settlement of the disputes relating to the amount of compensation in the High Court. Part VI of the Lands Acquisition Act (Cap. 189) provides for the establishment of Compensation Advisory Board to advise and assist the Minister in the assessment of any compensation payable under the Act. Other functions of the board, its operations and constitution are also prescribed.

Section 18 (3) of the *Public Roads Act 2002* gives authority to the Road Development Agency to enter any land to extract material for road construction. It also provides for notification to the property/land owner before preparation for commencement of extraction of materials starts. Under section 18 (4) of the Act, compensation should be paid to the affected land owner/occupier only if such land is on title. Therefore, and similar to the Lands Acquisition Act, no compensation will be paid for extraction of material on customary land.

5.1.2.2 Property

Valuation and Compensation for property is much more straightforward than for land: property owners' rights are enshrined in the law as deeply as the Constitution itself. *Chapter 1, Article 16 of the Laws of Zambia* provides for the fundamental right to property and protects persons from the deprivation of property. It states that a person cannot be deprived of property compulsorily except under the authority of an Act of Parliament, which provides for adequate payment of compensation. The Article further provides that the Act of Parliament under reference shall provide that, in default of agreement on the amount of compensation payable, a court of competent jurisdiction shall determine the amount of compensation.

The Law requires that a certified Valuation Officer must carry out valuations that will have a legal basis, just as a suitably qualified Land Surveyor must carry out land survey. All valuations were done by MHLG Valuations Department who operate in accordance with the Royal Institution of Chartered Surveyors (RICS) Code of Measuring Practice as recognized by the Surveyors Institute of Zambia (SIZ) - Valuation Chapter. The method adopted is the Cost Approach. This method is a cost based approach to Valuation and it has been recognized by the Royal Institution of Chartered Surveyors.

5.1.3 Laws and Regulations Related to Disputes

The *Arbitration Act Number 19 of 2000* provides for arbitration in cases where the land owner/occupier does not agree with the amount of compensation being offered. Under section 12 (2) of the Act, the parties to arbitration are free to determine the procedure for appointing the arbitrator or arbitrators. Section 12 (3) (b) states that if the parties are unable to agree on the arbitration, another arbitrator shall be appointed, upon request of a party, by an arbitral institution.

The *Lands Tribunal* (see section 5.1.1.2) was set up to speedily settle or prevent land disputes: the general opinion is that it has not yet fulfilled its purpose, at least in relation to speed.

Section 18 (5) of the *Public Roads Act 2002* allows the land/owner occupier to submit some written request to the Agency for any expense or loss that may be incurred if such land is appropriated. Section 18 (6) states that in the event of failure to agree upon the amount of compensation the matter shall be decided by arbitration in accordance with the Arbitration Act. The Act under section 18 (7) provides a number of conditions that shall form the basis for assessment of properties or envisaged losses that are the subject of disagreements.

5.1.4 Laws and Regulations Related to Resettlement in Zambia

There is currently no specific law dealing with involuntary resettlement in Zambia. The existing policies and arrangements only deal with voluntary resettlement. There is no doubt that this RAP is dealing with an involuntary resettlement situation. MACO's approach to land acquisition and involuntary resettlement is set out in the the Resettlement Policy Framework (RPF) Final Report, August 2010 prepared for IDSP by BRL and NIRAS Zambia. The RPF details the resettlement objectives, organizational arrangement and funding mechanisms that guide the resettlement planning and implementation operations for the entire IDSP. RPF is based on the following broad policy objectives:

- Involuntary resettlement must be avoided where feasible, or minimized, exploring all viable project designs;
- Where it is not feasible to avoid resettlement activities must be conceived and executed to enable the persons displaced by the project to share in project benefits;
- Displaced persons must be meaningfully consulted and must have opportunities to participate in planning and implementing resettlement programs; and
- Displaced persons must be assisted in their efforts to restore or improve their standards of living to levels prevailing prior to the beginning of the project.

The safeguard policy outlined above give the Lusitu communities the opportunity to make fully informed decisions with regard to their participation in the project what they did when they approved the RAP at Public Disclosure (see Appendix C and section 11.2).

In this context it is relevant to understand the role of the Chief. In Zambia, Chiefs are custodian of traditional/ customary land which they have jurisdiction on within their chiefdoms. They give and allocate land to their subjects including outsiders in form of Rights of Use through Headmens who are their representatives. The Chiefs have discretionary powers to allocate land in the best interest of their subjects or communities and therefore, in times or situations where land becomes scarce or limited, Chiefs are able to reallocate based on need and equity. The Chiefs are part of Government system of governance in that they are constituent members of the House of Chiefs which is a quasi legislative body under the Ministry of Local Government and Housing. Hence, the Chiefs are also regulated and operate within the boundaries of national laws. Implementation of the IDSP as a Government program is therefore entirely supported by Chiefs but more importantly, is that the Chiefs, having originally endorsed the project, are key to resolving matters that affect their communities. If there will be need for extra land, the chiefs are therefore expected to find, provide and allocate more land in the best interest of the community and the IDSP

5.1.5 World Bank's Policy on Resettlement and Land Acquisition Principles

Further, as a World Bank supported project, IDSP will have to demonstrate compliance with the World Bank safeguard requirements. The Lusitu Irrigation Project triggers the World Bank's Operational Policy on Involuntary Resettlement (OP 4.12) because the activities will result in change in use of land and loss of assets by a significant proportion of the Project Affected People (PAPs). The following are major elements of the policies/practices to be adopted by the Project:

- Avoid or minimize involuntary resettlement wherever possible by exploring other project design options;
- Insure that the PAPs can achieve an equivalent or improved standards of living within reasonable time;
- Fully compensate all transitional losses and for all impacts on assets and lands;
- Fully inform and consult affected people on resettlement and compensation options;
- Maintain gender equity in resettlement planning and implementation;
- Minimize the disruption of social networks and economic opportunities;

- Provide opportunities for employment ensuring that all vulnerable groups are adequately protected;
- Ensure the participation of the local community through incorporating them in committees involved in in planning and implementation process;
- Include the full cost of resettlement in the presentation of Project costs and benefits.

The Resettlement RPF sets forth a comparison of the similarities and gaps between Zambian law and OP 4.12 (see Appendix F) and concludes there is no conflict between ZEMA and OP 4.12 in respect of procedures to safeguard displaced people in the event of involuntary resettlement. Therefore if this report is accepted by both ZEMA and World Bank the regulations in respect of involuntary resettlement will have been satisfied, even though there is no specific law to follow. The RPF also made a comprehensive and exhaustive study on comparing the Zambian's Legislation and the World Bank's OP 4.12.¹²

5.2 Organisational and Institutional Framework

The RPF recommends that the Office of the IDSP National Coordinator will support implementation of the RAPs by disbursing project funds, maintaining all project documentation and providing safeguards. The NC-IDSP will also be responsible for M&E and the establishment of an information management system for the purpose. The Safeguards Officer within the office of the IDSP will be responsible for the implementation of the RPF and RAPs and will be assisted by the District Liaison Officers in the DACOs Offices.

The RPF also identifies as an institutional ideal four layers of Resettlement and Compensation Committees (RCC) from Provincial to Ward level. Each committee has its own specific responsibility and tasks during the resettlement process. It also concludes that none of those committees presently exist. The RPF particularly notes the role of the District Development Coordination Committees (DDCCs), which consist of heads of government and parastatal organizations in the District chaired by the District Commissioners (DCs). The DDCC is a strong and important committee to coordinate district institutions. It deals with project planning, development and implementation. It has sub-committees on major sectors such as education, agriculture, forestry, etc. The RPF recommends that the DDCC establish a Resettlement and Compensation sub-Committee to deal with resettlement and compensation issues that will arise in the course of RPF and RAP implementation in the district. The RCC will ensure the participation of the PAPs in the implementation of RAP

RCC will be formed in each District where the three sites are located prior to start of works. The composition of the RCC shall be the following: (1) chaired by the Council Secretary; (2) secretary will be the DACO; members are; (3) IDSP District Liaison Officer; (4) representative of Commissioner of Lands Office; (5) representative of District Planning Office; (6) Chairman of PPSC and (7) representative of MoLGH.

¹² IDSP, Resettlement Policy Framework. Final report, August 2010. Appendix 2; LEGAL FRAMEWORK: Comparison between Zambian Legislation and the World Bank's OP 4.12

The RCC is set up for oversight and governance and will be:

- Responsible for final assessment of compensation rates and allocations and will communicate them to the communities;
- Responsible for ensuring compensation procedures and entitlements are fully understood and accepted by project-affected people;
- In charge of documentation of data and information related to resettlement and compensation, including house allocation, land acquisition and compensation payments. The RCC will be supported through the provision of forms and instructions prepared by CP&CB and issued to the RCC by NC-IDSP;
- Responsible for disbursement to eligible households and accounting for the payment through normal District accounting procedures. Funds for compensation will be processed and effected by MAL in a timely fashion through the office of the NC-IDSP, directly to the RCC as a lump-sum payment;
- Providing support and motivation to the Chief's administration as represented by village headman in re-locating the balance of rain-fed land after implementing the irrigation schemes and resettlement area;
- Deciding the Grievance Redress Mechanism (GRM) but will not be responsible for implementing it. This GRM must be decided and in place prior to the resettlement process begins.

However, note that monetary compensation will be limited at Lusitu because:

- No cash compensation will be offered for land as long-term lease of lands converted from customary lands for the Project will be vested in a Community Land Trust with sub-leases for resettlers and irrigation block awards, land is being compensated through alternative lands offered;
- Compensation for fixed assets will be in the form of a new house for displaced households, new houses will be built by contractors engaged by IDSP;
- Cash payment will only be required in case fixed assets are valued at more than the value of a newly constructed house (assumed to be ZMW 55,000): these reports estimate the total cash payment will be in the order of ZMW 82,520.

The RCC should be formed as soon as possible. Construction of the irrigation scheme is expected to start in 2016 and re-settlement is scheduled for the dry season of 2015 (see section 12).

5.3 Implementation Arrangements

The RAP implementation process in Lusitu comprises of three different major components:

- Land Transformation component dealing with the transformation of customary land to State Land and a 99-year lease of the State Land to the Community Land trust;
- Land Consolidation component regulating the allocation of Trust land and re-allocation of remaining traditional customary land;
- Resettlement of PAPs component arranging the (i) movement of HHs whose houses are located in the development area to the resettlement area and (ii) payment of agreed allowances.

5.3.1 Land Transformation Component

As described under 5.1.1.3 Land Transformation Processes the NC-IDSP as prospective developer on behalf of the GRZ seeks consent of Chief and forwards through the District Council the application for leasing the land to the Commissioner of lands who issues a 99-years lease to the Community Land trust.

The lands location site plan as mentioned in the Land Transformation Process includes the following areas:

- Development area consisting of irrigation tiers and land for all associated infrastructure;
- Resettlement areas;
- And the remaining interstitial rainfed land.

Demarcation in the field of the areas as defined in the lands location site plan will be done by a team composed of MAL Land (Technical Services Branch), a representative of Chief's Administration, Representative of the PPSC and the DLO. Technical Services branch is officially recognized by GOZ while representatives of Chief's administration and DLO are familiar with the boundaries of the areas to be demarcated. The CP&CB service provider SOFRECO will facilitate the Land Transformation Process by providing maps prepared during the cadastral survey

5.3.2 Land Consolidation Component

After completion of the land transformation process two categories of land tenure can be distinguished: Community Land Trust area and remaining Traditional Customary Land Area.

Community Land Trust Area

Community Land Trust area covers the (1) irrigation schemes (Tier-1, Tier-2, and Tier-3) and associated irrigation infrastructure and (2) Resettlement Area. Leasing out of Tiers 2 and 3 land and allocation of tier 1 land to beneficiaries will be, per definition, the responsibility of the CLT. All 382 households of the Lusitu community have a right on an irrigation plot in Tier-1.

The allocation principles to distribute irrigation plots in tier 1 set forth in Section 8.4 of the RAP will be further described in the Trust Deed and the Land Administration Policy of the CLT. Tier 1 rights are perpetual and inheritable. This RAP discusses a mechanism to be agreed with the community (as represented by the CLT) to guide the allocation of irrigation plots in Tier 1 in section 8.4.2 which reflect the principle that total new land (rain fed and irrigated) given as compensation will have "*a combination of productive potential, locational advantages, and other factors [that] is at least equivalent to the advantages of the land taken*" as well as the fact that there will need to be special measures to take into account the needs for the most vulnerable. The mechanism must be based on an allocation policy that is clearly understood by all community members. Based on these principles the RAP also prepared a household list and indicative allocation of irrigated land; Appendix A. IDSP will provide a final list of allocation of irrigated and rainfed land per household to the WB for non objection prior to final approval by the CLT by March 2017 or as otherwise agreed with the WB.

Resettlement Area will be under the administration of the CLT and therefore the mechanism of allocating housing plots will be part of the Trust Deed and its Land Policy Administration document.

A team of the Site Activity Facilitator (SAF) assigned by the CP&CB service provider Sofreco and the DLO of the IDSP office will assist the CLT in the allocation of irrigation plots. Furthermore the CP&CB service provider will train CLT staff in membership administration, irrigation plot administration, bookkeeping and any other tasks to be performed.

Traditional Customary Land Area

The responsibility for re-locating the balance of Traditional Customary Land will be assumed by the Chief's administration as represented by village headman. RCC will provide support and motivation for this task, but only headmen's' local knowledge can achieve this because it requires precise information on access, requirement for land and land suitability. Since the area outside the development area will remain as customary land, only village headmen are mandated to do the job. To a point their efforts can be monitored, but it will be extremely difficult to gain precise information on post-implementation land in Lusitu that will remain as customary land. A model for re-allocating the remaining land outside the development area is discussed under the same section 8.4.2 as the allocation of irrigation plots and is presented in Table 8-5.

The same team of the SAF and DLO who will assist the CLT in allocating irrigation plots will assist the village headman with the re-allocation of the remaining Traditional Customary Land.

5.3.3 Resettlement of the PAPs Component

The Resettlement of PAPs Component will be implemented under the supervision of NC-IDSP. The compensation for fixed assets will be in the form of a new house for displaced households. The households whose fixed assets are over the value of the house will be paid cash as in Appendix B. New houses will be built by contractors engaged by IDSP. CLT as administrator of the Resettlement Area will assume the task of issuing Registration Certificates.

As stated under section 5.2 the RCC is set up for oversight and governance. To enable to perform its task the RCC will be assisted by a qualified technical field-team identified and appointed by the IDSP. This team will perform the following duties:

- Sensitizing the land holders/users (Identified in Appendix B: compensation Matrix) on the compensation process for fixed assets and finalise the list of entitled households;
- Confirming final validation of PAPs and affected assets carried out by MLGH Valuations Department;
- Participating in the process of disbursement of compensation entitlements obtaining written confirmation by recipients of receipt of the payments and accounting for the payment through normal Government accounting procedures at District level;
- Preparing documentation of data and information related to resettlement and compensation, including house allocation and compensation payments. This documentation will include:

- Final list of displaced households entitled to a new house:
 - Numbers of the plot (and house) allocated in the Resettlement Area as indicated in the Registration Certificate,
 - Final list of displaced households entitled to receive compensation in excess of the value of a new house,
 - List of receipt numbers of compensation payments,
 - Signed list of displaced households stating that they received adequate support for moving personal effects and transporting salvage materials from old house,
 - Final list will be presented and agreed with the community and IDSP/MAL.

A Management Information System (MIS) will be required to track the process: responsibility for design of this will be assumed by CP&CB on behalf of NC-IDSP. The RAP MIS should be available to key persons (RCC, NC-IDSP, PPSC) in the implementation process. The MIS need to be populated, updated and access to confirm entitlement and payments.

5.3.4 Disturbance Allowance and Re-location Support

Housing, services, preparation of the resettlement sites and any financial compensation due should be provided prior to displacement. This will limit disturbance to a minimum. The RAP schedule reflects the construction schedule and at Lusitu the 10-month construction schedule will mean that resettlement issues will have to be prompt and timely. Assistance in the form of food, temporary accommodation, medical assistance, employment referrals or priority employment in project activities should not be necessary, in particular during the interim period prior to the irrigation scheme becoming operational. This will require close monitoring of displaced people are moving no more than one or two kilometres and will remain located in their village of origin.

In the case of assistance being required, the project may call on the Office of the Vice President Disaster Management and Mitigation Unit (DMMU).

A disturbance allowance has been budgeted for displaced households that will be administered by the RCC. This may be calculated as a percentage of the total assets lost or as a lump sum, see section 9.5, but the amount to be paid will be finalised by the RCC and agreed with IDSP/MAL before payments are arranged.

5.3.5 Grievance Redress Mechanism

The RCC will decide the Grievance Redress Mechanism but should not be responsible for implementing it. A Grievance Committee should be impartial and it is recommended that it is convened directly within the Office of the DC. It is further recommended that key participants should be the DC's representative, the Chief's Advisor and functionaries from the PPSC.

The Grievance procedure is described in detail in section 14. The grievance mechanism needs to take into account the provisions of resettlements as practiced by the Resettlement Department of the Office of the Vice President because in case of resettlement dispute involving the PAPs to be resettled, then the aggrieved parties tend to appeal to the Resettlement Department of the Office of the Vice President. The RCC should be aware of this.

5.3.6 Organisation Mandated to Monitor and Evaluate

This issue is dealt with in section 15. It is recommended that the MAL Safeguards Officer assumes monitoring responsibilities. IDSP/MAL implementation responsibilities are limited to approval and disbursement of Ministry funds, therefore it is appropriate that monitoring should rest with the Ministry. The only potential disadvantage with this arrangement is that monitoring will be internal to IDSP so there is no obligation to disclose the results. External consultants appointed by NC-IDSP may do final evaluation.

5.4 Summary of RAP Implementation Activities

RAP implementation activities are summarised in Table 5-1 and Table 5-2. The RCC will be responsible for final assessments of compensation rates and allocations, communication with communities, establishing the grievance system and all aspects of payment and accounting from District level to site.

The Grievance Committee (defined in Chapter 14) will be responsible for all aspects of grievance logging, investigation, adjudication and where necessary referral. The Committee will recommend changes in implementation modalities if the number and nature of grievances warrants it.

Village headman will ensure sufficient rainfed land allocations for all Lusitu households during the construction period, expected to last for 30 months. They are also expected to report their allocations by assessing the sufficiency of cropland for displaced households within the resettlement area, additional allocations made to displaced households outside the resettlement area, and any impact on allocations of non-displaced households that happens as a result.

CP&CB will be responsible for preparing pro forma for the use of RCC and Grievance Committees and for IDSP/MAL for monitoring purposes (see section 15) and will establish a MIS for the use of the MAL Safeguard Specialist. IDSP will operate the MIS, be responsible for monitoring and overall fund management.

Table 5-1 RAP Implementation Activities

Responsible	Inputs	Activities	Outputs	Outcomes	Impacts
RCC	Appointment of members	Establish committee and procedures			
	Compensation rates and procedures by MAL/RAP	Meetings to:			
	Established system for funds transfer	review and agree final compensation rates	publicize final compensation rates	Affected people understand compensation procedure:	Acceptance of compensation procedure and entitlement lists
		decide on indent and payment procedure	post list of entitlements by household	who is entitled to compensation	
		decide on Grievance system	notify payment procedure and requirements to community	how and when to claim entitlement	
		decide on payment details for common property	advise community on Grievance/Complaints procedure	what to do in case of dis-satisfaction	
		decide on eligibility for Disturbance Allowance			
	Forms and instructions received from CP&CB/IDSP	Prepare final list of displaced households allocated to plot and house numbers	Allocate houses to recipients and issue temporary entitlement certificate	Recipients occupy houses	Houses fully occupied and sufficient in number
		Prepare final list of displaced persons entitlements to compensation which exceeds value of new house	Payment of compensation entitlements in excess of value of new house	Assets moved or replaced to designated house site	Asset value of house plot improved
		Prepare final list of displaced persons to be compensated for loss of perennial crops	Payment of compensation entitlements for perennial crops	Perennial crops replanted	Increased income from perennial crops
		Agree with IDSP/MAL on global values and indent IDSP/MAL Accountant			
		Receive compensation payments, transmit to site and transfer to eligible recipients		Irrigation blocks, dam site and inundation areas are clear before construction	Construction proceeds according to schedule
		Document payments and receipts and complete accounting procedures			
	Information on values of common property for compensation	Identify representatives (Church leaders etc.)		Reconstruction of common property outside area for development	Construction proceeds according to schedule
	Agree Valuations				
	Agree with IDSP/MAL on global values and indent IDSP/MAL Accountant	Payment of compensation entitlement for common property to designate representatives	Irrigation blocks, dam site and inundation areas are clear before construction		
	Receive compensation payments, transmit to site and transfer to eligible recipients				
	Document payments and receipts and complete accounting procedures				
Information on current rate for local Disturbance Allowance	Prepare list of displaced households eligible for Disturbance Allowance		Displaced households move in timely and orderly to new house and plot	Construction proceeds according to schedule	
	Agree with IDSP/MAL on global values and indent IDSP/MAL Accountant	Payment of Disturbance Allowance to eligible households			
	Receive compensation payments, transmit to site and transfer to eligible recipients		Irrigation blocks, dam site and inundation areas are clear before construction		
	Document payments and receipts and complete accounting procedures				
Procedures of Land Acquisition Act	Obtain and be conversant with the procedures of the Land Acquisition Act				
Land Commissioners records of titled land (Musakashii only)	Plan the land acquisition process of titled land	Land titled to individuals within scheme changes to Community Land Trust	Land for development free of encumbrment	Construction can proceed	
	Execute the process				

Table 5-2 RAP Implementation Activities

Responsible	Inputs	Activities	Outputs	Outcomes	Impacts	
Grievance Committee	Appoint members	Establish committee and procedures				
	Approve procedures set by RCC	Case by case review of grievance submissions received from RCC	Grievances resolved	Grievances addressed independently, transparently and timely	Perception of fairness of RAP implementation enhanced in community	
	Grievance log designed by CP&CB approved by IDSP/MAL	Post Grievance in public place on site and ensure issue is copied to IDSP/MAL	Investigate grievance and make recommendations for resolution	Unresolved grievances referred to IDSP/MAL	Changes to implementation procedures adopted by RCC/IDSP if necessary	Refinement of implementation procedures
		Ensure grievance paperwork is completed	Refer unsolved grievances to IDSP/MAL	Changes in implementation procedures if grievance issues warrant it	Hardship cases identified and recorded	
		Advise RCC/IDSP/MAL of procedural changes if necessary				
Village headmen	Summarised baseline data from CP&CB House allocation lists from RCC	From compensation schedules obtain area of house plot of each displaced household	List of displaced households with house plot area and additional land requirement	Seasonal requirement for rain fed land satisfied for all households		Adequacy of rain fed production during each construction season
		With household, determine adequacy of house plot for rain fed cropping requirement	List of displaced households and additional area allocated outside house plot			
		Identify suitable land for any additional requirements by household	List of non-displaced household who gave up land			
		Compile list of not-displaced people who have given up land to accommodate displaced	List of non-displaced households who were granted alternative land			
CP&CB	RAP reports/RAP Specialist	Prepare Entitlement Cards	Entitlement Cards distributed to RCC and headman together with instructions			
	RAP reports/RAP Specialist	Prepare baseline data summaries for headmen	Headmen have baseline rain fed cropping data for 2013/14			
	Government procedures	Investigate disbursement system and notify IDSP/MAL	IDSP/MAL aware of disbursement system			
	RAP reports/RAP Specialist	Design forms and manual for use by RCC and headman	Forms distributed to RCC and headman together with instructions			
	RAP reports/RAP Specialist	Design monitoring forms and manual for use by IDSP/MAL	Forms and manual distributed to IDSP/MAL			
		Approve forms with IDSP/MAL	Forms approved by IDSP/MAL			
	RAP reports/RAP Specialist	Establish MIS	MIS approved and passed to IDSP/MAL			
IDSP/MAL	NC-IDSP	Prepare Customary Lands change to State Land	Customary Land converted in State Land			
	MAL Safeguard Specialist	Approve pro forma and MIS drafted by CP&CB	Monitoring system established			
	NC-IDSP	Approve final compensation rates	Pass to RCC			
	NC-IDSP Accounts	Process and dispatch payments to RCC	Funds received by RCC			
	MAL Safeguard Specialist	Operate MIS and complete monitoring forms	Quarterly monitoring reports to NC-IDSP/World Bank			

6 RESETTLEMENT SITES

6.1 Requirements for Displaced Households

6.1.1 Housing

Valuations Department were given the list of households by name of household head which had been located within irrigation blocks on the Cadastral Map (see section 4) but even with this information the teams still faced the following problems in the field:

- Asset owners are not necessarily household heads: a wife for example, might occupy her own house and have the value recorded in her name: Valuations Department have to record assets in the name of the occupier, not by household;
- Some asset owners/occupiers had more than one house: Valuations Department valued each house held by an occupier In case of polygamous households will receive multiple houses as relevant;
- Additional asset holders were identified by the PPSC as located within irrigation blocks after Valuations had completed their work (33 asset holders, see APPENDIX B: Compensation Matrix, B2 and B3);
- Some asset holders whose assets were valued by Valuations did not appear in the CSO Census nor the cadastral mapping inside the Tiers (42 asset holders, see APPENDIX B: Compensation Matrix, B5): these were presumed to be outside the Tiers and therefore unaffected.

It is agreed with community that valid claimants are entitled to be compensated with only one low cost rural house.

In addition to their house, asset holders have fixed assets including kitchens, other out-buildings, shops, kraals, fencing, animal sheds, grain stores, bird scaring platforms and valuable trees, these are valued at replacement cost (see Table 6-1). It is understood that compensation will not be offered for these items, because in most cases the value of a new house is substantially more than the total value of assets of most asset holders. People do not lose assets of value/sources of livelihood that they will not be able to move. Only if an asset holder has total fixed assets valued at more than the cost of constructing a low cost rural

house would he or she be compensated for these items, and then only for the difference between asset value and cost of house construction.

Table 6-1 Estimate of Value of Fixed Assets of Lusitu Category 1 Households, ZMW

	Village Name	Number of Asset holders	Housing	Out-buildings	Shops	Kraals	Fencing & hedges	Animal sheds	Grain stores	Bird scaring	Trees	Un-accounted	Total
1	Tinde	6	23,760	4,350	0	0	0	0	930	0	0	-20	29,040
2	Mutumbi	29	245,910	17,790	12,290	6,070	150	860	8,050	30	10,800	10,750	301,950
3	Kakunka	4	8,300	1,400	0	0	0	0	0	200	0	3,700	9,900
4	Muchimbu	10	45,780	5,460	0	880	0	0	3,270	300	0	860	55,690
5	Sianyulu	11	71,002	5,878	0	13,240	0	2,180	11,755	36	0	3,269	104,091
6	Simanyangu	2	7,430	2,900	0	870	610	0	700	0	0	0	12,510
7	Chalichusia	10	71,740	5,680	0	1,480	5,960	1,230	4,420	160	1,600	1,760	92,270
8	Sigundu	22	163,284	12,530	0	615	0	0	6,040	380	600	-2,239	183,449
10	Siambote	3	12,560	380	0	0	0	30	1,200	0	0	3,000	14,170
11	Additional	24										0	252,580
	Total	121	649,766	56,368	12,290	23,155	6,720	4,300	36,365	1,106	13,000		1,055,650

NB Assets as valued by Valuations Department (121 asset holders): not all are eligible for compensation with a new house. The summary does not include the value of assets of asset holders identified subsequently by PPSC.

The compensation offered will therefore be just one house per household: this requires reconciling the status of asset holders to households. 11 asset holders were identified within the irrigation block area whose household head also lived in the block and was therefore entitled to a house. Only one house can be provided as compensation per household. Household members are not entitled to a house, but it is assumed that household members' assets would be compensated in cash. The status of each asset holder is shown in A.

Asset holders eligible for a house in compensation (according to the rules described above) and in order of strength of claim are:

- Fully eligible as household heads and family members identified in the census, located inside the blocks and valued by Valuations Department (52: Appendix B1);
- Fully eligible as household heads and family members identified in the census, located inside the blocks but not yet valued by Valuations Department (22: Appendix B2);
- Eligible as persons not identified in the census but acknowledged by the PPSC and located inside the blocks (11: see Appendix B3);
- Eligible as household heads and family members identified in the census, said to be located inside the blocks by the PPSC and valued by Valuations Department (9: Appendix B4);
- Ineligible, as persons not appearing in the census, but acknowledged by the PPSC and valued by Valuations Department but without confirmed locations: it is believed (on the basis of the number of existing houses inside the blocks identifiable from Google Earth) that these asset holders were mistakenly valued (42: Appendix B5).

The number of houses to be constructed is therefore 84 and the cost would be ZMW 4.62 million. The resettlement areas make provision for 97 house plots so a physical contingency for 13 new houses has been added in the budget, though these houses may not necessarily be constructed.

The location of new housing is marked on the Lusitu Resettlement Area Map and totals 69 ha. The average plot size per house would therefore be 0.80 ha. This

area would be adequate for a garden parcel the present size of which is 0.58 ha (see section 3.2.2).

One asset holder eligible for compensation with a house has assets that exceed the cost of a new house cost by ZMW 15,450. The value of assets of household members who are not eligible for a house is ZMW 67,069. A total of ZMW 82,519 would be paid as monetary compensation in addition to the cost of constructing 84 new houses. Compensation totalling ZMW 4.7 million would be paid to the community in exchange for assets valued as ZMW 1.16 million, which is generous. Asset poor households would benefit most.

6.1.2 Arable Land

With the irrigation scheme, non-irrigated land is not expected to be in short supply in Lusitu: the village area is 5,000 ha and the area cultivated now is about 1,000 ha. However, the best land is within the area designed for irrigation. Table 6-2 shows the area presently farmed by affected farmers within the development area, which totals to 209 ha and comprises 62% of the area to be developed. The details are shown on the Cadastral Map and the individuals affected are shown Appendix B6: Affected Farmers.

Table 6-2 Present Farmed Areas within Development Area

	Total ha	Farmed ha	% farmed	Number of farmers
TIER 1	133	109	82%	52
TIER 2	38	0	0%	0
TIER 3	98	90	92%	15
Resettlement Areas	69	10	14%	4
Total	338	209	62%	71

The intention is that house plots in the resettlement areas will include a substantial area for cultivation and other land use which would be additional to the irrigation allocation in Tier 1 and 2. The average size of house plot will be about 0.80 ha, similar to the present size of the garden home plot (see section 3.2.2). The total area of the resettlement areas is about 69 ha and this will account for about one third of the land under cultivation within the development area at present.

The balance of 140 ha will be re-allocated by village headmen in other areas within the village area. Neither house plots nor these other areas will have the relatively high suitability of the development area, but they should be adequate for rainfed cultivation without serious risk of erosion or salinity/sodicity.

6.1.3 Common Property

No common property was reported in the development area at Lusitu.

Customary users of commons land (grazing, fuel wood, forest products etc.) permanently taken up by project infrastructure or to accommodate resettlement will

be compensated¹³ through the mandatory allocation of equivalently adequate grazing land.

6.1.4 Services

The provision of basic services to the resettlement areas will include:

- Internal roads to access resettlement plots, which will be supplemented by farm roads provided as part of the irrigation system;
- A training centre, workshop and site offices for Tier 1 and 2 will be required; it is assumed that these items will be costed and designed under the Engineering Detailed Design contract and constructed with the irrigation scheme;
- Feeder roads and power lines: these will be constructed by direct contract arranged by MAL. The alignment of feeder roads is designed in such a way that they don't encroach/require acquisition of farmlands. Zesco has agreed that all transmission lines will be sited along access and feeder roads, thus not acquiring any lands for wayleaves;
- Basic schools: the Basic School in Sitinkwe is outside the irrigation blocks and does not have to be re-located;
- Health centres: the Chipepo Health Centre is outside the Sitinkwe area and will not be affected by the proposed project; the adequacy of health services with-project is being dealt with in the ESIA and responsibility for an adequate service in the future will be with the District Council;
- Potable water and sanitation needs to be supplied to the resettlement areas and will be provided as part of the housing contract. A water point should be provided for 20 households or less¹⁴ and should be placed at a reasonable walking distance of each household. Each new house will be constructed with toilet facilities (see design).

Water supply has always been a key issue at the Lusitu site. Groundwater is poor quality (saline and sodic) and the population is dependent on the Chico water supply pipeline. The water source of the Chico line is the Zambezi, so there are no issues with supply. The problem is demand grossly exceeds supply capacity of the system. Much of this demand is due to use of potable water for unmanaged irrigation and livestock watering. This should fall away as the irrigation scheme will provide water for both. In addition there will be no new demand on the Chico line because there will be no in-migration to the area as a result of the project. Therefore the only requirement for potable water supply will be to extend Chico line pipework to serve the resettlement areas and install standpipes at the recommended intervals. A budget has been provided for this as part of the RAP budget (see section 13).

¹³ Users of common land may include graziers and other users from outside the communities in the project area if community members acknowledge use.

¹⁴ According to the Resettlement Department of the Office of the Vice President, interviewed the 27/11/2014.

6.2 Resettlement Areas

6.2.1 Selection of Location

6.2.1.1 Identification of the Resettlement Areas

The resettlement areas for the Lusitu Irrigation Scheme are shown on the Resettlement Areas Map. As shown on the map, the sites are proposed at sites A, B and C near the Tiers 1, 2 and 3. Site A is planned to cater for displaced households relocating from Simayengu and Sianyulu sub villages of Sitinkwi village, site B is planned for the resettlement of relocated displaced persons from the central part of the Sitinkwi village, while site C is planned for the resettlement of displaced households from the southern part of Sitinkwi village.

The following are the key selection criteria applied when choosing the resettlement areas at Lusitu:

- Land availability and its suitability for housing development and rain fed agriculture;
- Close proximity to Tiers 1, 2 and 3 and existing settlements;
- Availability of grazing land in the vicinity of the resettlement areas;
- Agreement to the resettlement area sites by the local authorities and other stakeholders concerned;
- Easy access to existing and planned services and facilities;
- Acceptability of the sites by PAPS and other stakeholders.

The Resettlement Map shows the layout plans for the proposed resettlement areas A, B and C, showing the resettlement area's boundaries as well as layouts of individual plots within the resettlement areas. The plans have been agreed by the PAPS, the PPSC, the Chirundu District Council and the Area Chiefdom's Royal Establishment. The layout plans also show access roads and other planned services.

6.2.1.2 Land Suitability

The Resettlement Map shows the resettlement areas superimposed on land suitability classes for irrigation. The areas selected are not suitable for irrigation because they have some risk of profile sodicity. They are however suitable for rainfed agriculture as the profile is leached of sodicity during the rains. Large areas of land classified as unsuitable for irrigation in the Sitinkwe area are already cultivated during the rains. It is not the intention that any irrigation will be practiced in the resettlement areas.

6.2.2 Internal Layout and Design

The layout plans within the resettlement areas A, B and C show the proposed arrangement of the agreed plots, while table 633.1 shows the Lusitu resettlement areas, their location, hectareage, number of households and size of the housing plots.

Table 6-3 Areas of Resettlement Areas

Areas	Location	Hectares	Number of HHH to be resettled	Average area of the housing plot, ha
A	South	47.2		
B	Centre	19.7		
C	North	10.7		
Total		77.6	97	0.80

6.2.2.1 House Design

The Zambian Government is to build 97 houses for the eligible households in the resettlement area of Lusitu. The design of the houses to be built is shown in Appendix D: Low cost house design. Consultations with the affected households and local authorities were held and agreement reached on the matter (see Minutes of Public Disclosure Meeting held at Sitinkwi village on 5th May 2014).

The resettlement houses are to be paid for by the Government will be built by private sector constructors to be engaged to carry out the works in accordance with the stipulated terms of the Zambia Procurement Authority. The houses are much better in terms of quality than those currently occupied by the beneficiaries. Rapid and significant improvement in the living standards of the households concerned will be effected. The houses are being built for the beneficiaries as compensation for the loss of assets and land resulting from their resettlement.

The houses will be built on individual plots of 0.80 ha as shown on the layout plan (Resettlement are map). The beneficiaries and Government will sign a Memorandum of Understanding stipulating the terms of house occupancy before the houses are handed over.

6.3 Tenure and Ownership of the Resettlement Areas

All land in the Sitinkwi village resettlement areas is under customary land tenure obtaining within Chief Chipepo's chiefdom. However, Government investment in terms of infrastructure such as roads, water supply networks and the houses to be constructed for the PAPs are considered public assets unless the Government hands them over to the local authorities or individuals as stipulated in the MOU to be signed between the relevant parties. The resettlement areas, like the area to be developed for irrigation, will be demarcated, transferred to State Land and a 99-year lease drawn up in favour of the Community Land Trust. The eligible households, will have a sub-lease for the resettlement area allocated in perpetuity (in line with general principles and protections acceptable to the World Bank, including at a minimum, limited termination rights of the lessor and continuation of lessee land rights in case of failure of CLT)".

6.4 Development of the Resettlement Areas

6.4.1 Development Process

The following characterize the sequence of current development trends in Zambia namely:

- Approval of site plans and reservation of land for project development by the Commissioner of Lands;
- Land surveying of the project land by a licensed surveyor;
- Approval of plans for the proposed development on the reserved and surveyed land by the relevant planning authority, though in the case of Government's development in Resettlement Areas at Lusitu, MAL needs to consult the relevant local planning authority before construction works commence;
- Development of the land according to the approved plans;
- Construction on the land in the resettlement areas as per the approved plans following relevant building codes.

The MAL is in the process of following these steps in order to ensure that project development activities are commenced as soon as possible.

6.4.2 Demarcation

The site plans for the resettlement areas at Lusitu have been drawn up and are being circulated to Chief Chipepo and the Chirundu District Council for onward transmission to the Commission of Lands for reservation of the sites for the project.

Once the sites have been reserved for the project by the Commission of Lands, a qualified licenced surveyor will be engaged to demarcate the resettlement area boundaries and individual plots within them as per the drawn up layout plan.

6.4.3 Housing Construction Contracts

The Government has committed itself to construct 97 houses on 69 ha of land on individual plots of 0.80 ha each as shown in

Table 6-3. Construction of the houses should commence as soon as the necessary planning, building and bidding processes are completed.

6.4.4 Allocation of Plots

As already outlined, the number of houses to be constructed in the Lusitu resettlement areas for beneficiaries is 97, the beneficiaries have been identified and notified, the PPSC and the Resettlement Compensation Committee is in the process of putting final touches to a locally tailored acceptable allocation system which takes into account local customs and traditions such as polygamous marriages. The local communities have in this regard expressed that the displaced households wish to be resettled according to patterns which take into account in existing family and sub-village groupings.

6.4.5 Development Costs

The development of the resettlement areas at Lusitu will trigger the following costs:

- Cost of surveying of the resettlement area boundaries and individual plots within them by a licensed surveyor;
- Housing construction costs by the private sector construction companies to be engaged by the Government;
- Cost of providing required services like feeder and access roads, safe drinking water, health and other services.

The Zambian Government through MAL have set aside funds for the construction of houses for each household beneficiaries at ZMW 55,000 per house and a separate kitchen structure. The costs of development are included in the RAP budget described and calculated in section 13.

6.4.6 Environmental and Social Impacts

There will be some improvement in the access of the displaced population to basic services. Each plot in the resettlement area will be served by an access road, which will link to the system of farm roads in the irrigation scheme and the project feeder road. In their present locations, the displaced population have only footpath access.

There will be no material changes in the relationship of the displaced and relocated population with the host population. No household will be required to move from the area of its village of origin. Distance of displacement will not exceed two kilometres from point of origin. Numbers of households and social composition in each village will therefore remain exactly the same. There may be some opportunity for individual households to re-locate to another sub-village if they wish, for example to obtain better access to Tier 1 and 2. However, social relationships in the village may change because of the asymmetry of compensation: those who do not have to move and therefore receive no compensation may be jealous of those who do have to move and receive a new house. While there may be envy for those who have new houses, community remain strong as the overall benefits to the area are fully recognized and supported by the entire community.

The demands of the displaced population for fuel wood and grazing will not change with relocation. Their loci of demand will move not more than two kilometres from their point of origin and displaced households will remain in the same village area. There will therefore be no incremental impact on the demand for fuel, grazing and other natural resources. The Lusitu Irrigation Project itself will have a very small impact on fuel and grazing resources because it is small in size and confined to areas already cultivated. Dry matter production will increase as a result of increased crop residues from irrigation. Little additional clearing of the woody biomass will occur; most has already been removed.

While there will be no change in demand for health services as a result of relocation, the density of housing will be greater inside the resettlement areas than the present housing density. This means the possibility of spread of infectious disease is greater. Nevertheless, with an average house plot area of 0.80 ha, the new settlement will be sufficiently disbursed for such a risk not to be significant, especially with attention to drainage, sanitation and solid waste disposal.

Income restoration activities will be the increased opportunities for improved livelihood activities offered by the Lusitu Irrigation Project to all households in the

project area. The environmental and social impact of the project is dealt with in detail in the ESIA.

7 CONSIDERATION OF ALTERNATIVES

7.1 Resettlement Design

RAP strategic planning required firstly agreement between communities and IDSP in block and tier areas and locations (on the basis of an outline irrigation design) and secondly agreement by the community on the principles of re-organizing fixed assets and land holdings around the agreed design. These agreements proved hard to get at Lusitu.

Several visits were made by CP&CB Provider to the IDSP Lusitu site for the purpose of RAP strategic planning. During these visits, community consultations showed that the initial outline designs for irrigation development at Lusitu (see Engineering Feasibility Consultant's Presentation to IDSP in November 2012, Figure 10-1 in Engineering Feasibility Study Consultants Inception Report January 2013 and alternative layouts 1 and 2 distributed dated 12th February 2013) were not congruent with the prior preparation of the Lusitu community for IDSP activities (see note from CP&CB to NC-IDSP dated 26th February 2013). These preparatory activities were carried out in the period 2010-2012 only in Sitinkwe village, although these consultations had assumed the neighbouring and contiguous village Siajongoto (to the south) was also represented.

Siajongoto is not delimited geographically with Sitinkwe: it shares contiguous blocks of land suitable for irrigation with Sitinkwe on the middle Zambezi terrace. Siajongoto also has access to the nearby Banana Irrigation Scheme (never considered as part of IDSP initiatives), while Sitinkwe residents do not. The problem was not only confined to a mistaken target population, but also to the location of proposed irrigation blocks that initially were planned partly on areas mapped as sodic during the Semi-detailed Soil Survey. Later, following the semi-detailed soil map, design areas extended too far to the south and west, into the land of other communities in Chief Chipepo's jurisdiction.

Consultations with the Sitinkwe community showed that:

- The community wished irrigation development to take place under their control within the confines of their village boundaries: “Lusitu” therefore should be confined to the boundaries of Sitinkwe village;
- Both block extension workers and villagers recommended that the best land in the village area (mapped as Soil type 2 on the Semi-detailed Soil Survey and to the east of Sitinkwe settlement) be considered for Tier 1 land, except the area in the south adjacent to the Banana Scheme which was cultivated by the Siajongoto community;
- The community desired that the irrigation area should be all of Soil type 2 to the east and extended to the west up to the “chico line” (a water supply pipe named for the Chinese company that installed it). The Semi-detailed Soil Survey identifies the area between Soil type 2 and the chico line as sodic: this was disputed by the villagers but the technical results of the soil survey were maintained by DACO and IDSP staff;
- The community desired to include a discrete area of Soil type 2 of about 38 ha to the north of the main mapping unit (see Semi-detailed Soil Survey): this was recommended to the Engineering Feasibility Study Consultant and later included as Tier 2;
- The reason for the community wishing to extend irrigation to the chico line may be that it would result in more resettlement (including the large basic school) and therefore greater eligibility for resettlement compensation within the community;
- The reason for the community wishing to confine irrigation within their village area appears to rest on difficult relationships with Siajongoto community.

These consultations were carried for discussion to the IDSP Coordination Meetings and resulted in agreement in principle in the outline design between IDSP and the Sitinkwe community being made in March 2013. Subsequently the revised outline design was provided to CP&CB Provider on 1st June 2013. The relationship between the proposed outline design and Sitinkwe village settlement is shown approximately in Figure 7-1 (the blue line represents the boundary between Sitinkwe and Siajongoto villages). The Cadastral Map provides a more accurate and detailed description. The issues were discussed at an IDSP Coordination Meeting on 21st August 2013.

Figure 7-1 Resettlement Strategy at Lusitu



7.2 Compensation for Fixed Assets

The Principle of Compensation suggests that the sum awarded for compensation, should as far as practicable, place the claimant in the same financial position as they would have been or better, had there been no question of their land/property being compulsorily acquired. MLGH Valuations Department have valued the fixed asset of nearly every asset holder resident in the area proposed for the irrigation blocks. Valuations Department visited 121 sites with fixed assets within irrigation blocks: the sites were identified by comparing household locations with the irrigation block boundaries marked on the Cadastral Map. The value of fixed assets within the blocks totalled ZMW 1.1 million (US\$ 195,800) in current prices, or an average of ZMW 8,900 (US\$ 1,620) per asset holder. The maximum value of assets of one asset holder was estimated as ZMW 73,130 (US\$ 13,296) and the minimum was ZMW 530 (US\$ 96): standard deviation 11,655. There is thus some variation in the assets held between asset holders: see APPENDIX B: Compensation Matrix for the value of assets by asset holder and village.

MAL/IDSP has considered alternatives for compensation payments. The obvious and cheapest solution is direct payment to the asset holder of the sum calculated by Valuations Department. This has disadvantages. Firstly, the wide range of asset values will mean that compensation is extremely variable. The poorest will receive almost nothing in comparison with the very well resourced, but will still suffer the trauma of relocation. Second, payment will have to be made in cash to individuals (few have bank accounts in Lusitu. A final consideration is that the displaced will have to re-build their houses at the resettlement site. While the implementation schedule should allow for time to do this, it remains a risk that some houses may not be completed before the rains. For example, there may a shortage of bricks or roofing sheets due to high local demand.

To avoid all these potential difficulties, MAL/IDSP have chosen not to pursue the direct payment option for the compensation of fixed assets. MAL/IDSP have indicated that one new low cost rural house will be provided to each displaced household. Note that asset holders may have several houses at one location, note there may be more than one asset holder per household, note that the household head may not be an asset holder. However, in any case only one new house will be provided to the displaced household. However, to ensure equity between asset holders, this report assumes that in the case of two asset holders per household, the better resourced one may claim a house while the less well-resourced may not, but may be eligible for a cash refund for assets lost. There is an additional distinct advantage to MAL/IDSP's proposal. The houses can be placed in resettlement areas within a plot large enough to provide compensation for rainfed plots that must be vacated within the irrigation block areas, see below for further discussion of this advantage.

The Lusitu community have agreed to the proposal as described. Collectively, this is a good decision. If each new house costs about ZWK 55,000 to construct, the total value of compensation offered will be (for 84 houses plus associated cash compensation) ZMW 4.70 million (US\$ 0.84 million). The total value of affected assets at Lusitu is estimated to be ZMW 1.1 million; this suggests a generous compensation.

Providing a new house as compensation has a few disadvantages, both for individual households and the community. Individual households receive a fixed value (the house) in compensation for assets that are highly variable in value. This means that the poorest households will receive what is in effect a subsidy to re-locate. The richest households may have no incentive to relocate (apart from a substantial disturbance allowance, see section 9.5). Also, those households who do not have to re-locate receive nothing. This may lead to jealousy and acrimony within the community, particularly towards those who benefit asymmetrically. While individual conflicts may occur, note that community has accepted compensation structure. As to individual houses, additional structures are individual choices, but there are substantial overall gains to each household from having both a rainfed land allocation and irrigation block allocation.

7.3 Compensation for Land

The Cadastral Map identifies the areas of land in farms within the area intended for irrigation blocks and the names and areas of affected farmers are given in Appendix B6. It will be necessary for farmers to vacate these areas, though they will be entitled to an irrigation allocation in Tier 1. This allocation will provide the major proportion of their (increased) farm income in the with-project situation (see section 8.3). Even the land allocated to Tier 3 will remain under community control through a long lease agreement administered through the Community Land Trust. At present land users have access to the land they farm under customary law. The formation of the Community Land Trust will allow the customary land that is within the irrigation scheme to be transferred to State land, on which a 99-year lease can be issued. The 99-year lease will be in the name of the community. The community, through the Community Land Trust, will continue to administer the land to its members. The community will also be able to sub-lease part of the irrigation scheme to Tier 3 for a lease payment and probably access to other concessions such as extension and marketing services.

Having said that, farmers still see the land they farm now as their most important livelihood resource. The PPSC and communities concerned have decided the locations of new housing and the resettlement areas. They are shown on the Lusitu Resettlement Area Map, which is attached to this report. The average size of house plot over all the settlement areas will be about 0.80 ha. This compares reasonably favourably with average areas of garden plots cultivated by households (see Table 3-1).

7.4 Land Title

No ownership titles for agricultural land that was customary land before the project will be issued to individuals under MAL's IDSP. It is assumed that the community itself will continue to administer the land through the Community Land Trust, who will receive a 99-year lease from the State and will sub-lease all the land under its control. .

8 COMPENSATION AND REHABILITATION ASSISTANCE

8.1 Scope of Compensation and Rehabilitation Required

The objective of this section is to quantify the compensation required for assets lost and the extent of land reorganisation required to accommodate the project as designed within the boundaries of the scheme. The problem is addressed in two stages, first by quantifying the present distribution and ownership of assets to identify compensation requirements, and then considering the impact of the project on livelihoods to demonstrate that the irrigation proposed will make substantial improvements. It is concluded that the irrigation project will provide sufficient farm benefits to demonstrate enhanced livelihoods. There will be no other livelihood restitution measures required, other than a small amount of affirmative action to ensure vulnerable groups have a share in irrigation allocations. But to access these substantially improved agricultural livelihoods through irrigation, some reorganisation of land holdings will be necessary, grazing movements will have to be re-ordered and some households will have to re-locate to agreed re-settlement areas outside the irrigation blocks.

8.2 Present Distribution and Ownership of Assets

8.2.1 Cadastral and Land Use Mapping

The Lusitu Cadastral Map is shown in section 4. For convenience, the whole development area is shown on one map, supported by separate maps showing Tiers 1 and 2 and Tier 3. Suitable land for irrigation is shown in green. The basic irrigation design is shown (the irrigation tiers, access roads, power line, reservoirs etc.). Cadastral boundaries of customary land are shown in black and these areas are reported in Table 6-2 and Appendix B6. These are the main boundaries between holdings as shown by village headmen. A total of 294 ha controlled by 91 farmers is identified, of which 209 ha held by 71 affected farmers are located within irrigation blocks and resettlement area boundaries. Most of these land holders distribute a part of their land to other land users within their family group: village

headmen are aware of this but do not direct or monitor this re-distribution at family level, though they may arbitrate disputes if required.

The location of households is shown in black (for unaffected) and red (for displaced): the present distribution of settlement can be seen from the overall pattern. A total of 121 locations with fixed assets were valued by Valuations Department, but not all were inside the irrigation blocks. Of these 64% were in the name of a HHH reported in the RAP 2013 census. Other names are probably reported as one of the household members. Names of asset holders whose assets were valued by Valuations Department are shown in APPENDIX B: Compensation Matrix.

8.2.2 Valuation of Fixed Assets Eligible for Compensation

Valuations Department visited the Lusitu site between 28th September 2013 and 4th October 2013. All measurements were taken in accordance with the Royal Institution of Chartered Surveyors (RICS) Code of Measuring Practice as recognized by the Surveyors Institute of Zambia (SIZ) - Valuation Chapter. The method adopted is the Cost Approach. This method is a cost based approach to Valuation and it has been recognized by the Royal Institution of Chartered Surveyors' Red Book as the appropriate basis of valuations of buildings that rarely exchange hands on an open market.

The adopted Cost Approach method for buildings is determined on the basis of prevailing construction costs taking into account a modern substitute that would cost considerably less than an identical replacement, taking advantage of modern construction techniques and the use of modern materials.

The valuation date for Lusitu (important when considering the effect of inflation) is 28th September 2013. The cut off point was determined and any other exceptional case needing valuation will be handled by the CLT and local authorities. However assets values need to be indexed for inflation in line with the regulations of the Valuation Department. In addition, a second round of Valuations is inevitable before the RAP is implemented: all assets not valued in the first round will be assessed then.

Valuations Department visited 121 sites with fixed assets within irrigation blocks: the sites were identified by comparing household locations with the irrigation block boundaries marked on the Cadastral Map. The value of fixed assets within the blocks totalled ZMW 1.1 million (US\$ 195,800) in current prices, or an average of ZMW 8,900 (US\$ 1,620) per asset holder. The maximum value of assets of one asset holder was estimated as ZMW 73,130 (US\$ 13,296) and the minimum was ZMW 530 (US\$ 96): standard deviation 11,655. There is thus a substantial variation in the assets held between asset holders: see APPENDIX B: Compensation Matrix for the value of assets by asset holder and village. The breakdown of assets by affected village can be summarised easily and is shown in Table 8-1.

Table 8-1 Value of Fixed Assets in Irrigation Blocks by Sub-Village

	Village Name	Number of Asset holders	Kwacha	US\$
1	Tinde	6	29,020	5,276
2	Mutumbi	29	312,700	56,855
3	Kakunka	4	13,600	2,473
4	Muchimbu	10	56,550	10,282
5	Sianyulu	11	107,360	19,520
6	Simanyangu	2	12,510	2,275
7	Chalichusia	10	94,030	17,096
8	Sigundu	22	181,210	32,947
10	Siambote	3	17,170	3,122
11	Additional	24	252,580	45,924
	GRAND TOTAL	121	1,076,730	195,769

Table 8-2 shows the type of assets valued within irrigation blocks.

Table 8-2 Asset Valuation by Type of Assets

	Number	Total value, Kwacha	Mean value, Kwacha	Per cent of total value of assets	US\$ average per structure
High value housing	4	179,330	44,833	22%	8,151
Low value housing	128	479,056	3,743	59%	680
Kitchen	35	40,778	1,165	5%	212
Kitchen utensil stand	1	30	30	0%	5
Shower	2	270	135	0%	25
Pit ltraine	5	4,510	902	1%	164
Thatch Stand	1	980	980	0%	178
Shelter	3	9,500	3,167	1%	576
Shop	2	12,290	6,145	2%	1,117
Kraal	19	23,155	1,219	3%	222
Graden yard	4	6,110	1,528	1%	278
Hedge	1	610	610	0%	111
Fence	6	4,120	687	1%	125
Goat house	4	3,830	958	0%	174
Pig sty	1	440	440	0%	80
Chicken run	1	30	30	0%	5
Grain store	41	36,365	887	4%	161
Grain store Frame	3	1,720	573	0%	104
Barn	1	300	300	0%	55
Bird nest	11	1,106	101	0%	18
Trees	46	13,000	283	2%	51
Total		817,530		100%	

The types of assets valued are much as expected. Housing accounts for over 80% of value, and it is important to distinguish “higher value” housing from the traditional housing. Only four higher value houses were identified. There are two shops reported but the structures are of traditional construction. Other assets are simple structures that can easily be reconstructed locally apart from valuable trees that

were valued at about \$50 each. There are only about 50 valuable trees reported. Assets values by asset holder are reported in APPENDIX B: Compensation Matrix.

8.3 Income Restoration

8.3.1 Principles of Income Restoration

The Lusitu Irrigation Scheme will provide Tier 1 land, with complete hose-furrow irrigation infrastructure, to all households resident in the project area at the cut-off date. Tier 2 land is also available to community members depending on their ability to undertake an emergent farmer role. The Community Land Trust will hold all tier land on 99-year lease and the trustees (elected members of the community) will be responsible for making allocations. The farmer will not pay rent but he/she will pay water charges. These have already been calculated as part of the project feasibility assessments and will include elements of cost recovery and payment for irrigation services by the Scheme Operator. The irrigating farmer will receive technical support (input supply, extension, marketing services etc.) from Tier 3 (FarmCo). This support will be specified in the lease arrangement with the Community Trust.

The principles of income restoration have been discussed with the beneficiary population in a series of consultations and training courses delivered during 2013 (see six monthly Progress Reports of IDSP CP&CB Provider, 2013-2014). There is now a good appreciation by Lusitu farmers of the way the tiers will operate, both financially and technically.

8.3.2 Support and Training to Enhance Income Restoration

To enable the adoption of new farming methods the communities received training stipulated in the following modules in 2013: (i) Farming systems and farm management and, (ii) Water access and water management. The objective of the first module was to allow communities to analyse farm system changes as a result of IDSP leading to changes in farm management, including cash flow and labour requirement. The training session on water access and water management focused on communal water management.¹⁵

The Investment Support Fund (A) Provide resources for on-farm capital investments to improve productivity, quality and efficiency of irrigated agriculture; and (B) Build technical, market and managerial knowledge and skills of eligible grant beneficiaries to improve competitiveness of the produce of irrigation sites. The Fund have a special window for women, youth, and other vulnerable groups and provide among others access to legal services and access to knowledge and training. The Fund will become operative after irrigation schemes have been constructed.¹⁶

IDSP is closely linked to the project ICT-Enhanced Services for Women Farmers in Irrigated Agriculture, which is funded by the Swedish International Development Agency, managed by the World Bank, and implemented by International Institute for Communication and Development (IICD). The overall objective of the project is

¹⁵See Interim Progress Report January – June 2013, paragraphs 2.3 and 2.4.4 and Progress Report July-December 2013, paragraphs 2.3.3 and 2.3.5

¹⁶ See PIM, module 4

to improve the yields, income, and the degree of diversification of crops grown by women farmers through the use of information and communication technology (ICT). The interventions will begin in January 2015 and will end in June 2016. This Project has selected Musakashi site as their project area and it is envisaged that lessons learned on this site will be useful for Lusitu and Mwomboshi.¹⁷

Moreover a training program is foreseen during Phase IV Activities (during construction, handing over and first two years of operations) in which modules related to adoption of new farming methods might be included depending on a Training Needs Assessment which has commenced.

Training will also be provided by MAL, Department of Extension, to teach farmers on how to grow crops. Initially once/month on a rotational basis. The frequency will reduce with time.

8.3.3 Present Socio Economic Status

The present socio-economic situation at Lusitu is described in detail in the ESIA. Table 8-3 summarises the main findings.

Table 8-3 Farm Return, Food Energy and Labour by Farm Type, Present

Farm category	Number	Net farm return, US\$	Share of net farm return, %	Energy production mkcals	Energy demand mkcals	% energy demand satisfied	Farm labour requirement, days per annum	Labour supply, days per annum	% Female HHH	% Married HH
Large farmers	30	98,250	25%	2,273	284	800%	17,579	25,998	19%	84%
Medium farmers	179	233,044	60%	3,929	770	510%	36,554	121,648	24%	72%
Small farmers	141	53,780	14%	807	498	162%	7,669	80,934	51%	45%
Near landless	31	529	0.1%	5	81	7%	79	13,838	41%	38%
Total	381	385,603	100%	7,015	1,634	429%	61,881	242,419		

Medium sized farms are the mainstay of the village, accounting for 60% of the net agricultural income, food energy production and demand for agricultural labour. However, the population on medium farms account for only about 47% of food energy demand and labour supply. The economic health of the village depends on this group of farms for labour opportunity and its surplus production with which to pay for it.

Households with large farms are powerful in the village. They account for only 8% of households but generate 26% of the net value of production. Their food energy surplus is considerable and substantially beyond that which they require to pay for hired labour. Probably a significant proportion of their production is sold outside the village area. A substantial proportion of large farms are run by married or polygamous households.

Many household members of small farms are food insecure (160% margin on food energy requirements in a normal year of rainfall is small) and must sell labour off-farm or engage in alternative livelihood activities to make ends meet. A large proportion of this group is female-headed households. Households with small farms and near landless households would be considered below the poverty line and comprise 45% of total households – similar to that estimated by local leaders

¹⁷ See <http://www.iicd.org/articles/iicd-partners-with-world-bank-to-improve-yields-and-income-of-women-farmers-in-zambia>.

and reported in the Prefeasibility Study and estimated by a slightly different method in section 3.3.1.1.

The landless and near landless class must provide a reserve of labour for the large and medium sized farms. By nature of being landless they are highly food insecure, and dependent on patronage and alternative livelihoods. A significant proportion is female-headed but a high proportion is married, suggesting that marriage itself is not a guarantee to a sufficient land allocation in the customary system. The Prefeasibility study attributes food insecurity to households “without productive assets... required for agricultural production” – the farm model suggests it is lack of access to land itself which is the basic problem.

Although there is apparently heterogeneity in social classes and great disparity in the distribution of wealth it has to be observed that the community is a functional and inter-dependent socio-economic system. The introduction of a medium-scale irrigation system will have a profound impact on this system.

8.3.4 With-project Future Socio-economic Position

The expected with-project future socio-economic situation with irrigation at Lusitu is projected, the details can be found in ESIA. The return to family labour increases from about US\$ 4.92 per day to US\$ 9.78 per day while labour occupancy on field operations rises from 26% to 32%. Table 8-4 summarises the expected impact on different farm size classes which when compared with Table 8-3 shows a complete change in the distribution of economic activity between groups with irrigation. This assumes the allocation of irrigation will be done as described in section 8.4.2. Medium farms are still the key producers in the village, but the share of farm returns is more evenly distributed between the groups.

Table 8-4 Farm Returns, Food Energy and Labour by Farm Type, Future With-project

Farm category	Number	Net farm return, US\$	Share of net farm return, %	Energy production mkcal	Energy demand mkcal	% energy demand satisfied	Farm labour requirement, days per annum	Labour supply, days per annum	% Female HH	% Married HH
Large farmers	21	98,453	12%	1,935	199	972%	14,977	15,063	19%	84%
Medium farmers	179	356,566	43%	4,021	770	522%	38,599	101,615	24%	72%
Small farmers	141	192,526	23%	1,471	498	295%	13,519	68,131	51%	45%
Disadvantaged	156	187,324	22%	984	406	242%	8,209	59,455	41%	38%
Total	497	834,870	100%	8,411	1,873	449%	75,305	244,264		

All farm types are food secure (at the average): even the disadvantaged group produces twice the food energy as it requires. The large farm group still needs to hire labour, perhaps as much as 10,000 days per year, but there is a substantial labour reserve available amongst small farms and the disadvantaged groups. This is a satisfactory result for equity, though the rather low financial incentives (particularly return to labour which is less than double: one would normally hope for triple the return) are not impressive. There is little to be done about this; irrigation allocations have to be small because they are limited by the size of Tier 1 and the area of suitable land available for it.

Note that production on Tier 2 has not been modelled: Tier 1 and the rainfed area will be the community’s main land resource. Tier 2 and 3 may present labour opportunities only. Also not included are any returns from land leasing to Tier 3, though these should ideally be given as services rather than rent.

8.4 Irrigation Allocations

8.4.1 General Principles

The analysis of the characteristics of vulnerable groups above provides some indications for the method of distribution of irrigation allocations. Firstly, and based on the principles of current land allocation, Lusitu headmen will expect a weighting of allocations in favour of households who already have substantial holdings of customary land i.e. in favour of established married males with large families. The elected PPSC may (but not necessarily) be in favour of some affirmative action for female HHH, youth and the very few disabled. IDSP (in agreement with the World Bank) will certainly be in favour of affirmative action for any disadvantaged groups. Clearly there will be a lot of discussion about irrigation allocations.

The characteristics of disadvantaged groups have been examined using the data from the Lusitu census. Food insecure households are the largest group (136 HH), closely followed by female-headed households (132 HH), many of which are themselves food insecure. The polygamy issue appears small (polygamous wives reported themselves as female HHH in the census) but important in principle. Disabled people are rarely self-reported in Lusitu.

Affirmative action for disadvantaged groups may have negative consequences in the good intention of benefiting the poorest. The food insecure households, some female-headed households and all youth are unlikely to have the investment and operational funds which will be necessary to buy-in to irrigation. They will therefore initially need access to credit. Some may not have the labour available to operate an irrigation allocation. Because of their lower educational attainment some of the food insecure and female headed households are unlikely to prove to be the most capable farmers and may also be the most difficult to train. With a large proportion of the Lusitu population in the “disadvantaged” category (196 disadvantaged households at present (136 food insecure HH plus an additional 60 female-headed HH)) plus 113 incipient HH from unmarried youth plus the wives of 12 polygamous HH) the risk of sub-optimal implementation on Tier 1 is high without accurately targeted credit support and training. It is to be noted that the community will receive some income from Tier 3 operations as well (as land lease fee or share of the benefits or both). This will be used to finance services for Tier 1 and Tier 2 farmers. Specific focus could be given to training disadvantaged people.

8.4.2 Agreed Processes and Allocations, with Statistics as relevant

A mechanism needs to be discussed and agreed with the community (as represented by the Community Land Trust) to guide the process of irrigation allocation. The mechanism must be based on an allocation policy that is clearly understood by all community members. The principles of the policy are suggested to be and need to be adopted by the CLT in consultation with the community and in line with the terms of this RAP:

- Irrigation allowances should be allocated to representatives (household heads) of households that are identified and listed by village headmen (based on the present system of headmen’s books) and certified by the CLT;
- Every individual resident in the community can identify with one (and preferably only one) household on the household list;

- Specific disadvantaged groups can be identified in each community (food insecure households, landless households, youth and polygamous wives are defined in the RAPs): members of these groups should receive a preferential irrigation allocation which will make a significant difference to their disadvantaged status but will be within their resources to farm productively;
- Households with proportionally greater rights to land in the community area will feel entitled to a larger share of Tier 1 land than those with smaller: this should be acknowledged and expressed on the basis of the existing share of a household in the community's total land resource;
- The labour requirement for effective irrigated farming is assumed to be about five persons per ha: the policy of the CLT should be that households will not receive an allowance greater than their ability to farm (i.e. the maximum allowance to a household with five active members will be no more than one hectare); this implies that the CLT will have a policy that hired labour will not be employed on Tier 1.

Tier 2 farmers from the community will not have an irrigation allowance in Tier 1: this policy is debatable, but it has the intention of increasing the allowance of irrigation to less advantaged community members and increasing the household labour (and possibly capital) allocation allocated to Tier 2.

In term of allocation of land, it will be mandatory (i) to ensure special allocations for the most vulnerable members of the community; and (ii) that the combination of irrigated land and rain fed land given to farmers in compensation for land lost will be of equal or higher productive potential than the land (rain fed and/or irrigated) lost. This principle can not be modified by the communities or the CLT.

With these policy guidelines, it is straightforward to prepare a model to allocate Tier 1 to irrigators. With reference to the allocation of Tier 1 in Lusitu, the main elements are as follows:

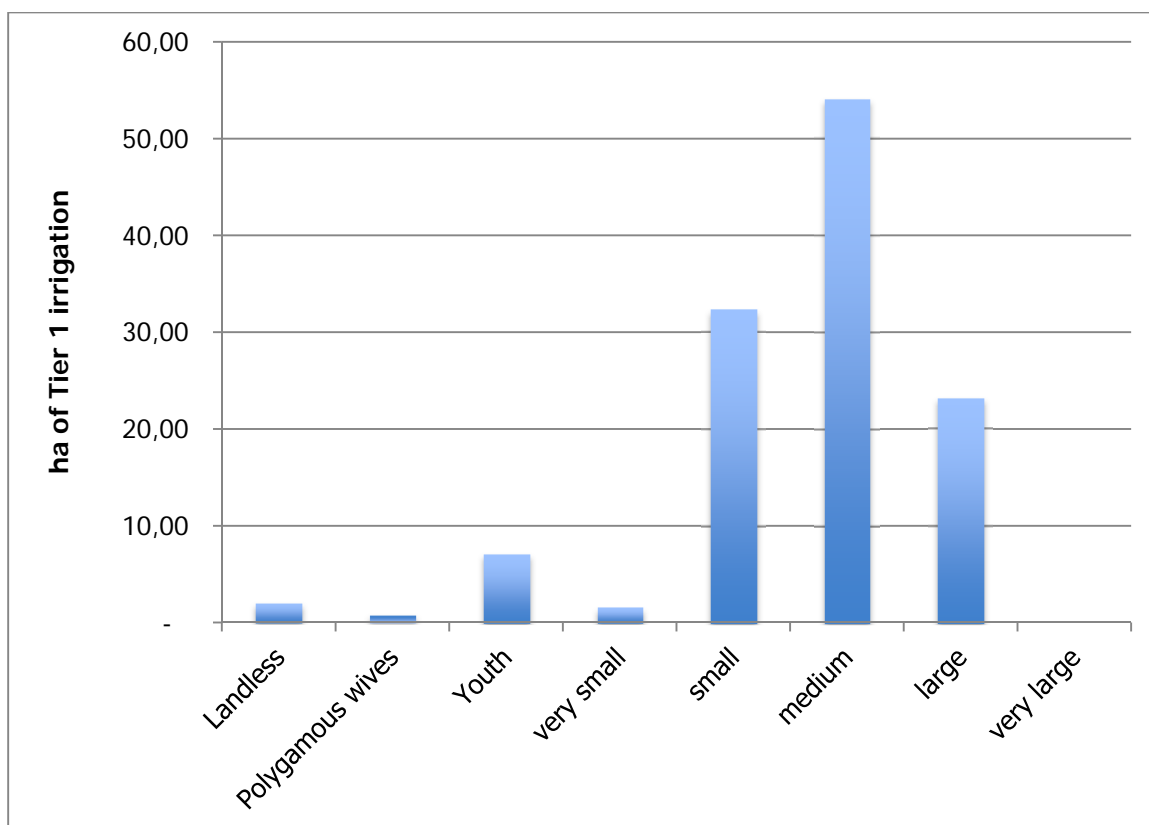
- The total Tier 1 area is 121 ha, divided into 0.25 ha management units, giving 484 allocations;
- There are 16 landless households, 12 polygamous wives, 113 youths and 382 households;
- CLT will have to decide an appropriate allowance for disadvantaged groups, the model assumes half an allocation (0.125 ha) to landless, and one quarter of an allocation (625 m²) to polygamous wives and youth;
- The allocations in the remainder of Tier 1 (111.2 ha and 445 allocations) can be divided between 382 households by listing the farm area of each (the total farm area is 1,404 ha), calculating the area in each farm class (the class limits used are based on quintiles of the farm size frequency distribution and are: very small <0.7 ha, small 0.7-3.26 ha, medium 3.26-10 ha, large 10-15 ha and very large >15ha) and apportioning the 445 allocations in proportion to the area farmed of the total by each size class;
- The result of this is that very large farms will receive an allowance of 5.42 allocations, large farms 4.20 allocations, medium farms 2.04 allocations, small farms 0.67 allocations and very small farms 0.13 of an allocation (these fractions of allocations are unmanageable, but "whole" allocations can be achieved by rounding at the end of the calculation);
- The allowances made to each farm are then checked against the household's labour supply and those households that have a greater allowance than their

ability to farm (based on at 5 active members per irrigated ha) are identified and the required reduction in their allowance calculated;

- The reduction (which sums to 26 ha or 5% of the Tier 1 area) is then re-distributed to farms with sufficient labour to cultivate it, in proportion to their present farm size as a percentage of the total farm area;
- The final irrigation allowance per farm is then rounded to the nearest management unit (625m², 0.125 ha, 0.25 ha etc.) so that allowances can be expressed in allocations: 0.25, 0.5, 0.75 and 1 or more allocations).

The model output is shown in Figure 8-1. A large proportion of Tier 1 would be allocated to small and medium farmers, which is satisfactory for equity. Disadvantaged households and individuals do not have to occupy a large proportion of Tier 1. The RAP shows that even the smallest allocation can have a positive impact on their household budgets.

Figure 8-1 Distribution of Irrigation Allocations by Farm Type



The resulting farm size by farm type can then be calculated, as follows:

- Assume that land allocated to irrigation blocks is lost from existing farms in the same proportion as the farm group accounts for the present total cultivated area, then subtract the corresponding area taken up by the blocks from the present area farmed by each group;
- Re-estimate the numbers in each farm class assuming:

- Nine large farmers take up Tier 2 farming and relinquish their present rainfed farm¹⁸,
- Add disadvantaged individuals who are not in households (youth (113), polygamous wives (12)) to the landless class;
- Recalculate the average farm size outside the irrigation blocks for each group;
- Add the area of irrigation allocations to each group as calculated above.

As shown in Table 8-5, with-project, the farm size reduces by about 11% from the present in each farm size category, but in the with-project future, 10% of all farms will be irrigated. This is an attractive transformation, though because of the small size of Tier 1, irrigation allowances are also small.

Table 8-5 Summary of Readjustments to Average Farm Size after RAP

Farm category	Without-project present			% of total farmed area	Tier 1	Tier 2	Tier 3	With-project future			Irrigation Allocation		new farm size with allocation	Distribution of farms by Tiers, ha	
	number	size	ha		121	35.1	91.8	outside blocks	new number of farms	new farm size	Number	ha		Tier 1	Tier 2
					Farm area lost by group										
large	24	11.9	285.60	23%	28	8	21	228.09	24	9.50	4.3	1.075	10.58	23.13	0.00
medium	105	5.66	594.30	48%	58	17	44	474.63	105	4.52	2.04	0.51	5.03	54.13	0.00
small	180	1.86	334.80	27%	33	10	25	267.39	180	1.49	0.67	0.1675	1.65	32.33	0.00
very small	47	0.35	16.45	1%	2	0	1	13.14	47	0.290	0.13	0.0325	0.31	1.60	0.00
youth and other	125	0	0.00	0%				0	125	0.00	0.25	0.0625	0.06	9.81	0.00
Tier 2								0	9	0.00	1	4	4.00	0.00	35.10
Total			1,231.15		121	35	92	983.25	490					121.00	35.10

Note that this solution is an improvement on that presented in earlier drafts of the RAP, which did not account for shortages of farm labour for irrigation. In this solution, the irrigation allowance is calculated for individual farms, giving an overall distribution between farms as shown in Figure 8-1. The average irrigated area per farm is only about 1.25 allocations, or less one third of a hectare, which will be disappointingly small to many Lusitu farmers.

8.4.3 Community Solutions

Community consultation (section 11.1) suggests that the community can with time allocate the available irrigable land between community members in a more informed way than the RAP planning team. Furthermore, additional flexibility has been introduced by the suggestion that irrigation allocations can be as small as 625 m². This possibility was discussed during community consultation, based on Options 1-3 shown in Table 8-6. However, the community solutions may not take into account household labour availability.

¹⁸It has been commented that large farmers are likely to be unwilling to give up their rainfed farm areas on these terms. However, most grazing is on common land rather than the land in farms (which has been shown to have a high cropping intensity, see section 3.2.3) so the livestock holding of these large farmers need not be prejudiced.

Table 8-6 Options for Irrigation Allocation (Tier 1)

OPTION 1				
Category	Number of HH	Present average Ha/HH	Proposed irrigated Ha/HH	Total Ha allocated/category
Large Farmer (future)	21	11.4	0.5	10.50
Medium Farmer	179	3.2	0.25	44.75
Small Farmer	141	0.8	0.25	35.25
Landless	31	0.028	0.25	7.75
Youth	113	0	0.125	14.125
Polygamist Women	12	0	0.125	1.5
			Total Ha in Tier 1	113.9
OPTION 2				
Category	Number of HH	Present average Ha/HH	Proposed irrigated Ha/HH	Total Ha allocated/category
Large Farmer	30	11.4	0.5	15
Medium Farmer	179	3.2	0.25	44.75
Small Farmer	141	0.8	0.25	35.25
Youth	113	0	0.125	14.125
Landless	31	0.028	0.125	3.875
Polygamist Women	12	0	0.125	1.5
			Total Ha in Tier 1	114.5
OPTION 3				
Category	Number of HH	Present average Ha/HH	Proposed irrigated Ha/HH	Total Ha allocated/category
Large Farmer	30	11.4	0.5	15
Medium Farmer > 2 workers	130	3.2	0.375	48.75
Medium Farmer < 2 workers	29	3.2	0.25	7.25
Small Farmer > 2 workers	110	0.8	0.25	27.5
Small Farmer < 2 workers	31	0.8	0.125	3.875
Youth	113	0	0.125	14.125
Landless	31	0.028	0.0625	1.9375
Polygamist Women	12	0	0.0625	0.75
			Total Ha in Tier 1	119.2

Lusitu is a small area and access by households to irrigation allocations is not expected to be a problem. Further, at least 1,000 ha of the village area apparently remains uncultivated allowing rainfed cultivation to be re-located – though the suitability of this land for rainfed cultivation has not been established and anyway it provides a necessary grazing and fuelwood resource.

APPENDIX A: Household List and Indicative Allocations to this report gives a list of the households enumerated in the RAP 2013 census, their geo-reference, farm area, the number of cattle and goats, the number of family members, and the sub-village of residence. Disadvantaged households are identified including the identification of those households considered to be food insecure (1=food insecure), female headed (1=female headed). Disadvantaged individuals are identified, which are youth (the number of sons and daughters of the household head between the ages of 15 and 24) and households with polygamous wives.

Finally an indicative Tier 1 allocation is estimated from the data to hand, which is based on farm size and labour availability as described above. A youth allocation is added if the household includes sons and daughters aged between 16 and 25. A polygamous wives allocation is added if more than two wives are reported from the household. The total is 484 allocations of 0.25 ha distributed among 497 irrigators according to their existing land holding and household labour availability in allowances which vary in size from 625m² to 4.75 allocations (1.125 ha). Tier 2 allocations (9) are taken from the very large and large farm category. APPENDIX A: Household List and Indicative Allocations gives the allowances by household.

In Lusitu only 71 households of the 386 households in Appendix A will have to give up land. Since not everyone is getting moved, for Lusitu the top up (if needed) is only relevant for these 71 HH. The last column in the table of Appendix A shows the difference between the allocated irrigation plot in Tier 1 of those households with an assumed productivity gain of 8 times (expressed in Net Return)¹⁹ compared to rainfed agriculture plus the housing plot in the resettlement area minus the rainfed land allocated under customary law of the Chief. The allocated irrigation plots will compensate for the land they will give up. The feasibility study of Mwomboshi site estimates the conversion coefficient from rainfed to irrigation agriculture at 48 (forty eight) times per ha. Positive values in this column indicate that households in potential will be able to restore their livelihood. Households with a negative difference (in total 40 ha), which are only located in Tier1, will be allocated rainfed land from the 530 ha rainfed land available²⁰.

8.5 Livelihood Restitution

Livelihood restitution for farmers (95% of the adult population; though those reporting other occupations also have customary land allocations and will therefore

¹⁹ Feasibility Studies and Participatory Planning of Group 1 Sites and Prefeasibility Studies of Group 2 Sites. Final Financial and Economic Report – Lusitu Site, March 2014. Section 8.4 Economic Benefits and Returns, Table 8-22

²⁰ It should be noted that the list of HH and existing land allocations in Annex A (including related cadastral information) will need to be verified and updated prior to the determination of final land allocation by the CLT.

benefit from the project) will be through the irrigation allocation to all existing households and the disadvantaged groups identified in section 3.3. Irrigation allocations have been planned to deliver “appropriate” incremental returns, commensurate with present land assets and ability to manage irrigation, as well as giving a fair chance to those who would not otherwise be considered eligible for irrigation allocations (wives of polygamous households), see section 3.3. Estimates of the benefits of the irrigation allocation to each category are concluded to be a satisfactory incentive to adopt the proposed project.

There are other livelihood activities reported in the Lusitu area carried out by a small proportion of the population many of which are also farmers (see section 3.2.1). There is no reason why any of these occupations should be negatively affected by project implementation. Labouring opportunities will increase (see section 8.3.4). Business opportunities will manifestly increase, as well opportunities in construction, education and services. There can be no question of a need for income restitution for those already in formal/informal employment.

Present grazing activities are important to the 30% of households that own grazing stock and control 42% ha of the land in farms in the project area (see section 3.2.5). It is inconceivable that this large section of the population will reduce their livestock enterprise and, with project, the enterprise can even be expected to increase as irrigation profits are invested in greater numbers of livestock. Potentially this may pose problems for project implementation in terms of separation of the cropping and grazing areas. Nevertheless the proposed location of the irrigation blocks does not overlap much with the common grazing lands and the community already show itself adept at managing mixed farming.

Dry season grazing on flood plain (land use will not change) and wet season grazing on the terraces: Lusitu has about 3 000 ha of uncultivated land which is ample for grazing. More critical is water points in the dry season and stock moving from floodplain to household in the wet season. For this reason corridor access is planned. The community already show itself adept at managing mixed farming. Therefore no changes to present livestock management at Lusitu are proposed in this RAP.

8.6 Negotiation Procedures

Resettlement options have been discussed with the affected community as described in section 11.1. The communities have hard copy maps of the scheme design and each household is aware of its location in respect to irrigation blocks and infrastructure. The opportunity presented by relocation, in terms of gaining better access to an irrigation allocation in Tier in the village of origin has also been discussed. As a result the PPSC identified resettlement areas as shown on the Lusitu Resettlement Map. These sites have been checked in the field as being free of existing settlement and with a low density of cultivation.

There will be no cost to displaced households in taking up the new housing offered to households displaced from the irrigation blocks. A contractor will construct the new houses and water supply will be provided by a set of standpipes at regular intervals in the housing area. In order to construct the houses by government contract, the land will be converted to State Land. The intention is that certificate sub-lease issued by the Community Land Trust will be provided to the house and

plot in the name of the occupying household. Since the 99-year lease on the housing area will be in the name of the Community Land Trust it will be the Trust that governs the terms of the lease. This will secure both the house and plot from speculation by individuals and prevent incursions by non-community members.

The houses will be Government standard low cost rural house design. This is reproduced in Appendix D. Low Cost Housing Design. The proposals for site development are described in section 6.

There is no necessity to consider the impact of growth of population in respect of the provision of houses. The houses are intended to accommodate those who move dwelling place from within the irrigation block to outside. This will only happen once, because no new house construction will be permitted within the irrigation blocks after the scheme is constructed. However, the growth of population is extremely important in respect of the fixed availability of irrigation allocations. The matter has been addressed in the ESIA report, and also in section 8.4.2 in respect of preserving access to irrigation for youth.

8.7 Other Compensation Issues

The previous sections have described the impact of the irrigation allocation on household income and it has been shown that irrigation will provide adequate and substantial livelihood improvement for those who will be displaced. In addition the irrigation allocation will increase the farm budgets of the remainder of the population. These people, while they will not move, will experience a reduction in the area of rainfed cultivation available to them, not only because large areas will be taken up by irrigation but also because they will have to share the remainder with those who must move. The need for livelihood improvement is equally applicable to them.

Critical to this is the continuous access by farmers to land planned for irrigation development up to the point where irrigation can be provided. The schedule discusses these needs in more detail. Also critical is that contractors avoid the destruction of standing crops. Once again, this is dependent on observing the schedule and ensuring good communication between contractor and community. As well as ensuring the contractor minimises disturbance to the community, the community should allow the contractor access to specific sites at specified times. It may be necessary to control crop planting in certain proscribed areas. In the case that standing crops must be destroyed, it will be necessary to have them valued (the District Agricultural Office can handle this) and the farmer compensated. This should only happen in the event of a communication failure.

In the case of perennial crops, these have already been valued and reported in this RAP. There are very few and their value is so small that no special arrangements for compensation appear necessary.

No businesses (other than a kiosk with stock which is portable) were identified within the construction area of the irrigation scheme and so no livelihood restitution will be required for such.

Compensation for grazing and fuelwood areas (if needed) will be made. Most of this takes place on extensive marginal land that is not within the irrigation scheme. The area for marginal and common land use will not be significantly reduced.

Another important argument for not compensating for land has already been made: all land will remain in the communities' charge even after scheme construction.

Social and public infrastructure will be particularly enhanced by the irrigation scheme, with the provision of power to the site, an access road and a substantial increase in the density of farm roads. These have been planned to avoid existing fixed assets, but in case fixed assets are affected they will be compensated for on the same terms as described for housing.

The concept of a "displaced" population being accommodated within a "host" population is not applicable in the case of Lusitu. Even the re-settlement areas are within the village area from where displaced households have their origin.

No arrangements are made within this RAP for migrant workers associated with construction. Needs are much dependent on the type of construction company. Some may establish their own facilities according to the needs of their workers. Contractors should establish rules to ensure that there are no social conflicts between migrant workers and communities. They will be responsible for dealing with issues such as HIV/AIDS and STIs.

9 TRANSITIONAL ARRANGEMENTS

9.1 Transport to the Sites

Transport from point of displacement to the resettlement sites need not be an expensive or resource demanding operation because:

- The settlement sites are less than two kilometres from the points of displacement;
- Displacement will not be outside the village boundary, hence logistical support from the village communities is likely;
- Displaced people have agreed to be compensated with a new house for the fixed assets at their point of displacement, therefore there should be no obligation of the project to move these fixed assets (kitchens, toilets, animal enclosures etc.);
- Housing will be ready for occupation before the move: no displaced household is expected to move into temporary accommodation: it is certain that given prior access to the house plot before the move essential structures (e.g. animal enclosures) can be constructed before the move;
- Therefore the project may only have the responsibility of moving personal effects and equipment that are unlikely to be voluminous or heavy. Livestock can be walked.

It is estimated therefore that a light lorry or ox cart would be sufficient to move the personal effects of several households from point of displacement to a newly constructed house in a nearby resettlement area in one day. Lorries could be hired, made available from the District Council or even from the Disaster Management and Mitigation Unit (DMMU). An appropriate budget has been included (see section 13).

9.2 Timing of the Move

Timing of the move depends on the construction schedule (see section 12). The first principle behind the resettlement schedule is that each resettlement site will be prepared before access to the displacement area is required by the contractor to

begin scheme construction. The second principle is that movement should take place after harvest of rainfed crops and before planting, so that village headmen can secure access to sufficient accessible land for each displaced household before the move. Lusitu Irrigation Scheme will be constructed within one year, so only one growing season will occur in the construction period and there will be no need for phased movement. A detailed plan is given in section 12.

9.3 Temporary Loss of Income

In principle, there should be no temporary loss of household income from displacement, as the Chief in the project area has agreed that more than sufficient land is available for interim replacement. Additional interim rain fed land will therefore be available and be allocated until irrigation scheme is operational to ensure that PAPs will not suffer loss of income during this interim phase. Moreover there is a provision in the Entitlement Matrix and budget for land clearing of additional virgin rain-fed land so that farmers can start growing their crops at the onset of the raining season. Note that the loss of income from perennial crops is already compensated for in the assessment by Valuations. Livestock income will be unaffected. For emergency cases the project will help the community through the Department of Land Resettlement of the Vice-president Office.

9.4 Compensation for Legal Costs of Land Titling

The resettlement areas identified are all on customary land. The intention is that before construction of houses and access roads, the tenure of the land should be changed to state land. Commissioner of Lands should give title to the Community Land Trust. The Community Land Trust would then issue an entitlement certificate in the name of the displaced household head. The delivery process is described in detail in section 5.1.1.3. IDSP will be responsible for arranging the process and paying costs. These costs are a project cost, not a resettlement cost, and have already been budgeted for.

9.5 Disturbance Allowance

Disturbance allowance is intended to compensate displaced people for inconvenience, stress, time required for planning the move and other intangible costs a household incurs from relocation. Of course, such a sum is difficult to fix. In Zambia, 15% of the value of household assets has been taken as the disturbance allowance²¹, though it could be argued that a lump sum rather than a variable award depending on assets held is more appropriate. In addition, households classified as vulnerable have received an additional 15%. In any event, the disturbance allowance has been included in the RAP implementation budget in section 13.

²¹ www-wds.worldbank.org/servlet/.../IB/.../RP1920VOL120PAPER.pdf

9.6 Payment Principles

Payment of compensation and other entitlements and assistance will be made to displaced households in advance (i.e. in the transition period) according to the following principles:

- Compensation shall be paid prior to displacement;
- Compensation will be at least full displacement value and the compensation policy and its processes shall be perceived by the displaced households as being full, fair and prompt;
- Taking of land and related assets may take place only after compensation has been paid; and resettlement sites, new houses, related infrastructure, public services and moving allowances have been provided to displaced persons;
- In addition to these entitlements, households who are found to be in difficult situations, and are at greater risk of impoverishment such as widow/widower headed households, households without employment, single parent households etc., as identified by the census, will be provided with appropriate assistance by the project;
- Compensation and other assistance should be provided prior to displacement, and preparation and provision of resettlement sites with adequate facilities.

10 SOCIAL AND ENVIRONMENTAL IMPACTS

10.1 Housing

10.1.1 Temporary Construction Impacts

No temporary construction is envisaged in the re-location process (see resettlement schedule, section 12). Displaced households are being moved only about two kilometres from their points of origin. With good planning during the one full dry season before irrigation scheme construction is scheduled to begin there is time to complete the land transfer process, construct the new houses and organise the moving process. As indicated in the Entitlement Matrix transport will be provided for moving both furniture as well as salvageable materials.

10.1.2 Water Supply

Water supply has always been a key issue at the Lusitu site. The population are dependent on the Chico water supply pipeline, on which demand grossly exceeds supply. Much of this demand is due to use of potable water for unmanaged irrigation and livestock watering.

The project will extend and increase the capacity of the Chico line as part of the housing contract. The new irrigation scheme will ease pressure on the Chico line by provision of an additional pump station to serve the irrigation scheme. Irrigation will move from gardens near the homestead to the irrigation scheme as designed. Some irrigation water will no doubt be used for livestock watering.

10.1.3 Drainage and Sanitation

The socio-economic survey showed that sanitation requires attention at the Lusitu site. To this end each household in the resettlement area will be provided with a VIP toilet. The resettlement areas as designed will therefore contribute to an improvement in sanitation in the village as a whole. The management of the Chico potable water supply system should also include a sanitation sub-group to improve sanitation management in the remainder. This is important because of the increased risk of transmission of waterborne disease in the new irrigation system,

though as this is a piped pressure system the risks are much lower than a gravity irrigation scheme.

10.1.4 Waste Disposal

Household waste disposal is not an issue at the Lusitu site, which is rural, poor and with a low population density. Waste disposal from the irrigation scheme (mostly agro-chemical and fuel containers and used produce bags) is dealt with in the ESIA.

10.2 Access to Services

There will be some improvement in the access of the displaced population to basic services. Each plot in the resettlement area will be served by an access road, which will link to the system of farm roads in the irrigation scheme and the project feeder road. In their present locations, the displaced population have only footpath access.

10.3 Impact on Host Population

There will be no material changes in the relationship of the displaced and relocated population with the host population. No household will be required to move from the area of its village of origin. Numbers of households in each village will therefore remain the same. There may be some opportunity for individual households to relocate to another village if they wish, for example to obtain better access to Tier 1 and 2. However, social relationships in the village may change because of the asymmetry of compensation: those who do not have to move and therefore receive no compensation may be jealous of those who do have to move and receive a new house.

10.4 Fuelwood and Grazing

The demands of the displaced population for fuel wood and grazing will not change with relocation. Their loci of demand will move not more than two kilometres from their point of origin and displaced households will remain in the same village area. There will therefore be no incremental impact on the demand for fuel, grazing and other natural resources. The Lusitu Irrigation Project itself will have a very small impact on fuel and grazing resources because it is small in size and confined to areas already cultivated. Dry matter production will increase as a result of irrigation. Little clearing of the woody biomass will occur.

10.5 Public Health Issues

While there will be no change in demand for health services as a result of relocation, the density of housing will be greater inside the resettlement areas than the present housing density. This means the possibility of spread of infectious disease is greater. Nevertheless, with an average house plot area of 0.80 ha, the new settlement will be sufficiently disbursed for such a risk not to be significant, especially with attention to drainage, sanitation and solid waste disposal.

10.6 Income Restoration Activities

Income restoration activities will be the increased opportunities for improved livelihood activities offered by the Lusitu Irrigation Project to all households in the project area. The environmental and social impact of the project is dealt with in detail in the ESIA.

11 PUBLIC CONSULTATION

11.1 Consultation Process

Site Activity Facilitators (SAF) were carefully recruited and appointed in March 2013 and thoroughly trained for one week in Lusaka to perform their role on the sites.²² A major task of the SAF is to facilitate continuous contact between the CP&CB team, communities and MAL staff at district level. They also ensure a regular follow-up of passing information and instructions between project stakeholders and monitoring work in progress.

The CP&CB SAF presence at the sites has been and is still a cornerstone of the establishment of IDSP activities. The link between IDSP, SAF and the community has been strengthened and became more sustainable after the establishment of the elected PPSC. Information discussed and decisions taken in PPSC meetings facilitated by SAF are disseminated by the PPSC members to the group they represent and vice versa from the group to the PPSC. SAFs play an important role by regularly attending lower level group meetings. In this way as many groups as possible are reached.

Moreover intensive use is made of National and Local Radio, newspapers and relevant fora to communicate information and important milestones of the project. The National Agriculture Information Service (NAIS) is in the forefront of disseminating this information to all relevant parties.

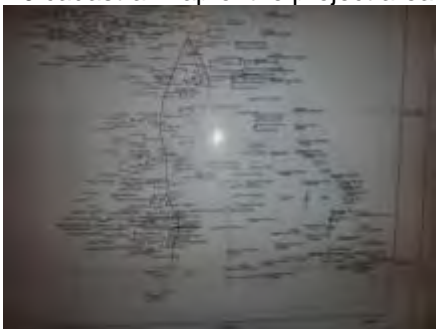
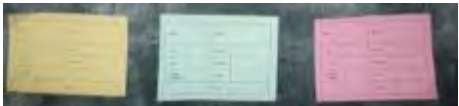
It is important to emphasise that RAP consultation between February and April 2013 led to an important milestone: an agreement with the community on the outline of the irrigation blocks and tiers. During this time block boundaries changed considerably to take into account the physical and socio-economic specifics at the site (see section 7.1). This consultation was successful in that it allowed the Engineering Consultant to undertake feasibility design within agreed block boundaries.

²² See Progress Report January – June 2013 paragraphs 2.1 and 2.2


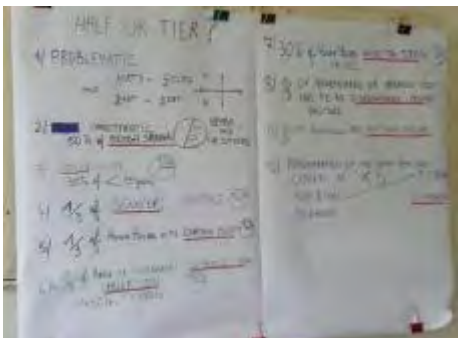

The second consultation process required all the data (census, cadastral and valuation) reported in the RAP to be presented to the communities and to gain their agreement on resettlement and compensation proposals described in section 4.2. This required innovative communication tools due to the complexity and quantity of the information to be presented. The CP&CB team was guided and assisted by the Sofreco Communication Specialist. The consultation process is described below in Figure 11-1.



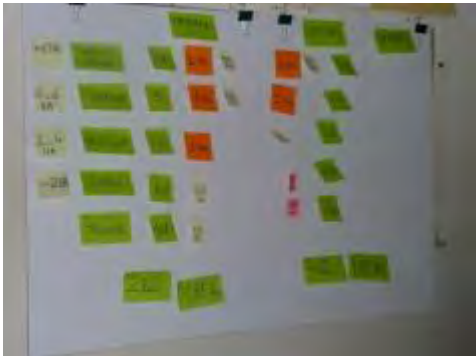

The above described consultation mechanism which started off in the first half of 2013 continued and will continue as long as CP&CB provider is contracted by IDSP. Activities performed by SAF, including consultations of Communities on RAP and CLT documents, are reflected in the semi-annual Progress Report of the CP&CB provider²³.



Figure 11-1 Elements of the Consultation Process

	Tools	Methodology	Efficiency
1	<p>A0 cadastral map of the project area</p> 	<p>On a laminated and waterproof gloss A0 paper map of the Site, each HHH was asked to check his/her presence and HH location with a yellow sticker.</p> <p>If the information was wrong, the HHH signalled his/her disagreement with an orange sticker, indicating that the census list must be corrected.</p> <p>A tube was supplied to transport and protect the rolled up map.</p> <p>This map was passed through each sub- village or zone and presented to each community member by a PPSC RAP dissemination team coordinated by the Site Facilitator.</p>	<p>Enables the checking of the presence or not of the Community member on the census</p> <p>Participatory</p> <p>Practical on site</p> <p>Visual</p> <p>Fast</p>
2	<p>HH Profile card</p> 	<p>The HH Profile card stores the basic census information.</p> <p>The information from the census is copied onto cards before the meeting and supplied to each HHH</p> <p>The HHH has an opportunity to check, correct and validate this information on his/her own card, before giving back to the PPSC with corrections</p> <p>The cards have three colours:</p>	<p>Needs time and manpower to prepare the cards</p> <p>Good mean of communicating census data at an individual level but requires assistance by PPSC members</p>

²³ See section 2.4 Site Facilitators of progress reports No 1-7 covering the period January 2013 to June 2016

	Tools	Methodology	Efficiency
		<p>Green card: HH directly affected by the project (HH or farmed plot inside one of the Tiers)</p> <p>Yellow card: HH outside the Tiers</p> <p>Pink card: Disadvantaged people to be beneficiary of an irrigated plot</p>	
3	Validation of the census data by A3 hardcopy editing	<p>The census data was provided on A3 hardcopy to the PPSC to firstly correct the HH Profile Cards and then if necessary edit the HH data</p> <p>The corrected hardcopy was returned to be re-entered on the final data base</p>	<p>Practical but time consuming (3 weeks of work)</p> <p>Efficient</p>
4	<p>Presentation of RAP information on coloured A4 paper cards</p> 	<p>RAP information was summarised in key words, ideas and results using simple figures, explicit percentages and key numbers.</p> <p>Slides are pinned to the wall and the report results are reported to participants, step by step.</p> <p>Different colours were used: white cards show factual results (demographic, socioeconomic), yellow cards show development results (impacts, risks, etc.)</p>	<p>Can be prepared in the office in advance</p> <p>Useful for institutional presentation</p> <p>Visual</p> <p>Not interactive during the presentation but suggestive for later debate</p> <p>Needs two animators</p>
5	<p>Poster</p> 	<p>Handmade posters can summarize in key numbers and percentages the main characteristics of the site</p>	<p>Quick and fast to prepare and present</p> <p>Useful for community and still better on an institutional level</p>
6	<p>MetaPlan of the Compensation Matrix</p> 	<p>The compensation matrix is simplified in key ideas and words:</p> <p>In rows: identifies HH that are living inside or only farming inside or outside but will have to share land with resettled HH</p> <p>In columns: Losses, compensations, benefits</p> <p>Each category is expanded and detailed on a second matrix</p>	<p>Visual</p> <p>Needs a sound comprehension of the project</p> <p>Needs a single animator with participation of the public</p> <p>Interactive</p>

	Tools	Methodology	Efficiency
7	<p>A0 Sketch map of Tier 1</p> 	<p>A sketched representation of Tier 1 was presented on A0 paper.</p> <p>The drawing must be to scale and allow a minimum irrigation allocation to be identified and marked with a post-it</p> 	<p>Needs time and care to draw</p> <p>Very visual</p> <p>Enables the community to understand and participate in irrigation allocation planning</p> <p>Very much appreciated by participants</p> <p>Practical</p>
8	<p>Identification of irrigation allocation options by location, category of beneficiary and size of plot</p>  	<p>The options of location in Tier 1 are organised in a matrix built with different coloured post-it stickers:</p> <p>In rows: categories of farmers by present size of farmed area : very large, large, medium, small, very small</p> <p>In columns: options of the distribution of the irrigation area among the beneficiaries</p> <p>In each cell: the size of plot per category and the number of beneficiaries in the category</p> <p>The size of post-it is proportional to the size of the plot (to be more visual and understandable)</p> <p>The constant value is the finite net irrigation area (121 ha in Lusitu)</p> <p>The variables are the number of beneficiaries per category (how many large farmers, small, etc.) and the size of the irrigation allocation</p>	<p>Stimulates discussion on irrigation allocation between farmers</p> <p>Promotes the idea that the area for irrigation is finite</p> <p>Allows community to identify priorities and norms for allocation decisions</p>
9	<p>RAP Implementation Timeframe</p>	<p>The Action Plan of Resettlement and the timeframe/schedule of RAP was simplified and summarised in Key Actions/Steps. Three different colours were used to design three categories of stakeholders:</p> <p>White cards: Stage of implementation</p>	<p>Practical</p> <p>Fast</p> <p>Understandable</p> <p>Visual</p>

	Tools	Methodology	Efficiency
		<p>Blue cards: Community action</p> <p>Yellow cards: Government action</p> <p>Pink cards: Services Providers action</p>	
10	<p>Consultation Book</p> 	<p>A consultation book was supplied to each PPSC to refer comments, grievance, reaction of visitors</p>	<p>Well adapted to an institutional habit</p> <p>Good tool of communication</p> <p>Quick and cheap to implement</p>

Item 8, the identification of irrigation allocation options by location, category of beneficiary and size of plot was notably a success in providing a framework to discuss irrigation allocations but some strategic decisions still have to be finalised within the community. These include:

- The criteria for accessing an irrigated plot of specific size (options are described in section 8.4);
- The size and characteristics of the disadvantaged groups the community agree to target (groups are suggested in section 3.3);
- Which minimum and maximum size of plots (sub-divisions of the basic plot size described in the Engineering Feasibility Study may be possible, down to as small as 620 m²);
- The social organization of Tiers 1: by village/zone, by category (small with small, large with large etc.) leading to formation of WUGs.

After deciding on preferred options the Tier 1 sketch maps are useful for detailed planning. It can be concluded that the communities can play an active part even to the point of decision making in irrigation allocations.

Tier 2 irrigation allocation was not discussed during the communication process. This requires the identification of suitable emergent farmers (which can easily be done from the census data now available) but the farmer characteristics required needs to be clarified (for example, a quantification of the “start-up” resources of a potential Tier 2 farmer needs to be specified) to know which large or very large farmer might be part of the Tier 2. No participants at the consultation process presented themselves as interested in Tier 2.

The level of participation and contribution to the consultation process was encouraging: this suggests a positive outcome to the RAP. At Lusitu data validation has been completed and incorporated in this report.

11.2 Public Disclosure of the RAP

Following announcements in the *Zambian Press* and extensive preparation, the RAP for Lusitu was presented by the Team Leader CP&CB Provider and the Resettlement Specialist CP&CB Provider at a RAP Public Disclosure Meeting held at Sitinkwe village, Lusitu on 9th May 2014. About 154 people of 381 PAPs attended the presentation including MAL-IDSP, World Bank, the four IDSP consulting teams (Z-A Engineering responsible for irrigation design, CEPA responsible for financial planning, ISFA responsible for the operation of the Irrigation Support Fund and SOFRECO responsible for community participation and capacity building), local MAL officers, the Chief's Representative, District Council and local people.

The presentation gave an overview of the requirements of the RAP procedures, the principles governing re-settlement and compensation, the consultation process which had already taken place and the elements of the RAP as described in this document. The participants were then asked to acknowledge their involvement in the RAP preparation as well as their knowledge about the movement involved. They demonstrated ownership and understanding of the RAP having participated in the RAP surveys (Census, Cadastral survey, and Valuation survey) and being informed about the RAP content. Household current location in the future irrigation blocks were for example known as well as the compensation modalities.

Questions and comments by the public attending the meeting on the proposed RAP are described in the minutes, see APPENDIX C: Minutes of the Public Disclosure Meeting.

The Public Disclosure was concluded with no reported disagreements to the RAP proposed.

Figure 11-2 Public Disclosure: Meeting Lusitu Group 1 Scheme



12 RESETTLEMENT SCHEDULE

The Resettlement Schedule is shown in Figure 12-1. The Detailed Engineering Design estimates a construction period of 12 months. The IDSP Workplan, presented on 8th October 2014 identifies the necessary tasks to secure the IDSP Lusitu project legally, arrange the PPP contracts and carry out procurement. After accommodating these tasks, the Workplan estimates that a contractor can be put in place in Lusitu in February 2016.

The Resettlement Schedule includes the historic stages of census, socio-economic survey, cadastral mapping and valuation of assets. The cut-off date is specified, as is the date of Public Disclosure. The period of data validation and consultation is extensive, as is the period of discussion of the RAP within IDSP.

The Resettlement Schedule makes allowance for establishing the legal framework in which the community will hold its land assets under the project. This is the setting up of the Community Land Trust (CLT), the framework of which is being established by the Transaction Advisor of the IDSP. While not a part of this RAP, the CLT is a necessary condition for transferring the irrigation and resettlement areas from customary into state land with a head lease in the name of the CLT. It is important that the community accepts the modalities of the CLT and receives training in its administrative responsibilities. The arrangements for the CLT must be completed by November 2016, by which time it is estimated that the land transfer processes will be completed.

The land transfer process is described in section 5.1.1.3. At Lusitu it can be divided into two. Firstly, the transfer of customary land to State land requires the Chief's approval of an application by IDSP (as investor) to be transmitted through the channels of the District Council to the Commissioner of Lands. IDSP has already obtained the agreement of the Chief to this process as far back as a documented workshop that took place in November 2012. Secondly, survey and numbering will be carried out by Survey Department. This will be based on the boundaries of the Tiers and the resettlement areas already established by detailed engineering design and this RAP. After this, Commissioner of Lands issues a 99-year lease in favour of the CLT. The schedule assumes this can be achieved in April 2015, just at the time the CLT is operational at community level.

In parallel, arrangements will be made for the development of the resettlement areas, following the planning guidelines described in section 6. A housing constructor will be identified following local tender procedures that will be instigated by MAL. Ideally, housing should be constructed in the dry season after the conversion of the resettlement areas to state land in the name of CT: this will be from April 2016 (the Schedule shows the approximate months of the rainy season in green). The Schedule assumes that the development of the resettlement areas will be over one year; the dry season of 2015.

The Schedule then plans the process of resettlement. Another critical time linkage in the schedule is that the resettlement areas should be developed by the time displaced persons are ready to move, with houses and sanitation services, access roads, and access to portable water all in place before houses are occupied. To minimise disruption this movement should precede the wet season. Not only is it uncomfortable to move in the rains, time must also be allowed to establish rainfed cultivation for the coming cultivation season. Since the readiness to move depends on the establishment of the organisational and institutional framework for resettlement (described in section 5.2) this also must be scheduled. These events (completion of housing, readiness to move) are scheduled to coincide in September 2015.

The schedule assumes that the RCC (section 5.3) and Grievance Committee (section 5.3.5) are established in March 2015. The responsibility for this (according to the RPF) lies with the DDCC. The establishment can be facilitated by the IDSP Site Committee, which is a local coordination committee designed for IDSP implementation. The roles and responsibilities of the RCC and Grievance Committee are described in the cited sections and summarised in the Schedule. Finalisation of the compensation rates and establishment for a fund transfer mechanism between IDSP/MAL and the RCC must be established. In practice this should not take long. Compensation rates have already been specified (see section 4) and obviously the Government fund transfer system will be used. Note though that the volume of funds to be accounted for will be relatively small, as most compensation will be in the form of a new.

A five-month period should be adequate to see the RCC operational and through it, entitlements delivered. Note that payment of all entitlements is supposed to be effected before the movement of displaced people.

Another critical activity is the allocation of rainfed land to displaced people before the rains. This will have to be planned in detail during the dry season. At Lusitu the result is feasible. Houseplots are only 0.62 ha which is similar to the average size of the present garden plot. There is adequate land suitable for rainfed cultivation outside the irrigation blocks and resettlement areas. Construction inside the irrigation blocks will not take place until the end of the rains in 2016, so the irrigation blocks will still be available for rainfed cropping in the 2015/16 cropping season. It is impossible to micro-manage rainfed allocations for each household within the RAP, but the customary land allocation process exists and will continue to be implemented by village headmen.

The Schedule also shows the beginning and expected duration of construction, from March 2016 to February 2017. That implies that the community will rely on rainfed cultivation only for the next two cropping seasons, 2014/15 and 2015/16.

13 RESETTLEMENT COSTS AND BUDGETS

A budget can be developed for the cost of resettlement, the main element of which are:

- Monetary compensation for fixed assets not covered by the provision of a new house for asset holders;
- The cost of development of the resettlement areas, including land clearance, construction of housing, provision of water supply and access;
- The cost of land development for the balance of the rainfed agriculture areas which is not relocated to the resettlement areas, basically land clearance and access;
- Disturbance and relocation costs;
- Administration costs.

Monetary compensation will be only 1.5% of the RAP budget, because of the policy of providing a new house rather than the compensation of fixed assets. Only households with more than one asset holder in the affected areas and/or a house in the affected areas worth more than ZMW 55,000 will be eligible for financial compensation.

The cost of development of the resettlement areas is 90% of the estimated cost of the RAP. This will be handled under works contracts by MAL, the largest element will be the construction of the houses (80% of development costs); the balance will be accounted for by water supply and access road construction. An additional minor requirement will be to prepare the land within the resettlement area to a condition ready for rainfed cultivation.

Land development outside the resettlement and irrigation areas will be limited to providing access to and clearing about 82 ha, which is the balance of the area of rainfed cultivation presently inside the irrigation blocks that will not be relocated to the resettlement areas.

Monetary payment of disturbance allowance is calculated as 15% of the value of assets of displaced asset holders. Asset holders identified as vulnerable (food

insecure and female headed households) will be entitled to an additional 15% on the value of their assets.

RAP administration costs are presented in Table 13-1. The cost heads are computing, transport, miscellaneous costs and Government allowances. The cost heads are divided between expenditure to be incurred by the RCC, the Grievance Committee, Village Headmen, CP&CB and the MAL Safeguard Specialist. For Lusitu, while administrative costs are only 1.1% of the total RAP budget, they account for 15% of the monetary costs that the RCC will be expected to disburse. This is reasonable. The MAL contract for development of the resettlement and rainfed agriculture areas is not part of the administrative responsibilities of the RCC.

The total RAP budget is shown in Table 13-2. Physical contingencies of 5% have been applied. Price contingencies for monetary compensation reflect inflation for the period 2013-2015, that is between valuation and RAP implementation, which will be about two years.

Table 13-1 Administrative Costs for RAP Lusitu (in ZMW)

	Unit	Quantity	RCC	Grievance	Headmen	CP&CB	IDSP MAL	Total	Capital	Recurrent	Capital	Recurrent	Total	
Computing														
Computer	each	3100	1	1					6,200				6,200	
Printer	each	600	1	1					1,200				1,200	
Consumables	lump sum	2000	1	1						4,000			4,000	
Total computing costs			5,700	5,700	-	-	-	11,400						
Transport														
Chirundu-Sitinkwe-Chirundu	km	60	10	5	-	2	5							
Chirundu-Lusaka-Chirundu	km	280	3	3	-	2	5							
Total km			1,440	1,140		680	1,700							
Total transport costs	ZMK/km	1.5	2,160	1,710		1,020	2,550	7,440		7,440			7,440	
Miscellaneous costs														
Stationery	lump sum	500	500	500		500	500			2,000			2,000	
Training materials	lump sum	500	500	500		500	500		2,000				2,000	
Security arrangements for payments	lump sum	500	500	500						1,000			1,000	
Communications	lump sum	500	500	500		500	500			2,000			2,000	
Total Miscellaneous items			2,000	2,000	-	1,500	1,500	7,000						
Allowances														
Lunch allowance	per day	200	20	10	40		10							
Nights allowance	per night	868	6	6	-		10							
Total allowances			9,208	7,208	8,000	-	10,680	35,096		35,096			35,096	
Price contingencies		7%	1,335	1,163	560	176	1,031	4,266		4,266			4,266	
Physical Contingencies		10%	1,907	1,662	800	252	1,473	6,094		6,094			6,094	
Total budget			22,310	19,443	9,360	2,948	17,234	71,295						
Computing %			26%	29%	0%	0%	0%	16%						
Transport %			10%	9%	0%	35%	15%	10%						
Miscellaneous %			9%	10%	0%	51%	9%	10%						
Allowances %			41%	37%	85%	0%	62%	49%						

Capital	Recurrent	Capital	Recurrent	Total
6,200				6,200
1,200				1,200
	4,000		-	4,000
				-
				-
				-
				-
				-
	7,440		-	7,440
				-
				-
	2,000		-	2,000
2,000				2,000
	1,000		-	1,000
	2,000		-	2,000
				-
				-
				-
	35,096		-	35,096
				-
	4,265.52		-	4,266
	6,094		-	6,094
9,400	61,895	-	-	71,295

Table 13-2 Lusitu RAP Implementation Budget

Item number	Item	Unit	Quantity	Unit cost, ZMW				2015	
					ZMW	USD	%	Capital 2015 excluding contingencies	Recurrent 2015 excluding contingencies
Monetary compensation for fixed assets									
1	Additional monetary compensation for fixed assets greater than the value of one new house	number of asset holders	1	15,450	15,450	2,492	0.2%	15,450	
2	Monetary compensation to asset holders not eligible for new housing to value of fixed assets lost	number of asset holders	11	variable	67,069	10,818	1.0%	67,069	
	Physical contingency		5%		4,126	665	0.1%		
	Price contingency		14%		11,957	1,929	0.2%		
Development of Resettlement Areas									
3	New housing for displaced households, number	Number of houses	84	55,000	4,620,000	745,161	66.9%	4,620,000	
4	Rural kitchen structures	Number of kitchen structures	84	7,000	588,000	94,839	8.5%		
5	New housing for forced re-settlement from roads, pipelines and reservoirs (estimate)	number	0	55,000	-	-	0.0%	-	
6	New housing for forced re-settlement from feeder roads and power lines: contingency included in resettlement areas	number	13	-	-	-	0.0%	-	
7	Land clearing of resettlement sites	ha	69	1,240	85,560	13,800	1.2%		85,560
8	Internal roads	km	6.9	1,000	6,900	1,113	0.1%	6,900	
9	Water supply	lump sum			237,970	38,382	3.4%	237,970	
	Physical contingency		5%		276,921	44,665	4.0%		
	Price contingency		7%		387,690	62,531	5.6%		
Land Development Outside Resettlement Areas									
10	Land clearing of additional rainfed land	ha	82	1,240	101,680	16,400	1.5%		101,680
11	Access to rainfed agriculture areas relocated from blocks	km	3	1,000	3,000			3,000	
	Physical contingency		5%		5,234	844	0.1%		
	Price contingency		7%		7,327.60	1,182	0.1%		
Disturbance and Relocation costs									
12	Disturbance allowance (all households)	Total fixed asset value	1,113,361	15%	167,004	26,936	2.4%	167,004	
13	Additional Disturbance allowance (vulnerable households)	Fixed asset value of vulnerable HH	277,505	15%	41,626	6,714	0.6%	41,626	
14	Relocation support (transport, food etc)	Number of asset holders	94	1500	141,000	22,742	2.0%	141,000	
	Physical contingency		5%		17,481	2,820	0.3%		
	Price contingency		14%		50,661	8,171	0.7%		
Administration of the RAP									
15	Computing, transport, allowances and miscellaneous				60,936	9,828	0.9%	9,400	51,536
	Physical contingency				6,094	983	0.1%		
	Price contingency				4,266	688	0.1%		
Sub-total Monetary compensation for fixed assets					98,601	15,903	1.4%		
Sub-total Development of Resettlement Areas					6,203,041	1,000,491	89.8%		
Sub-total Land development outside Resettlement Areas					117,242	18,910	1.7%		
Sub-total Disturbance and Relocation costs					417,773	67,383	6.0%		
Sub-total Administration of the RAP					71,295	11,499	1.0%		
Total Resettlement Budget					6,907,952	1,114,186	100.0%	5,309,418	238,776

The total cost of RAP implementation is estimated to be about ZMW 6.91 million (USD 1.11 million) including contingencies. The resettlement areas make provision for 97 house plots so a physical contingency for 13 new houses has been added in the budget, though as these houses may not necessarily be built the budget total excludes the cost of their construction.

The resettlement costs can be compared with the cost of engineering works available from the Engineering Feasibility Study that are about US\$ 3.3 million for Lusitu. This suggests that resettlement might account for 33% of project costs, which is very high because of the small area being developed for irrigation and the high population density.

Resettlement costs work out as about US\$ 4,126 per developed ha (269 ha of irrigation). This unit cost should be compared with the budget given in the IDSP COSTAB (which dates from about 2011), which is only US\$106 per developed ha for resettlement costs. The very high unit cost is because of the small area to be developed for irrigation, together with a high population density: there are about 1.5 households per irrigated ha at Lusitu (compared with only 0.38 households per ha at Mwomboshi).

The EIA and RAP (presumably study/administrative costs) are together budgeted in IDSP COSTAB at US\$ 30 per ha. Administrative costs for developing the RAP amount to US\$ 21,500 for Lusitu. This includes the cost of cadastral surveys, valuations and population census. It can be attributed per ha over the area developed (269 ha of irrigation) and gives a figure of about US\$ 80 per developed ha. The costs of administering the RAP (Table 13-1) are estimated to be about US\$ 14 per developed ha.

The Resettlement and Rehabilitation Guidebook²⁴ notes “those (RAPs) budgeting more than 3.5 times per-capita GNP are relatively free of significant resettlement problems”. The Zambian GDP per capita in 2013 was US\$ 1,540 per capita. There are at least 493 persons in the households of asset holders listed in APPENDIX B: Compensation Matrix. The cost of the RAP is therefore US\$ 2,252 per capita and only 1.5 times per capita GDP.

²⁴ <http://www.rhd.gov.bd/Documents/ExternalPublications/WorldBank/Resettlement/generic/sb1.htm>

14 GRIEVANCE REDRESS

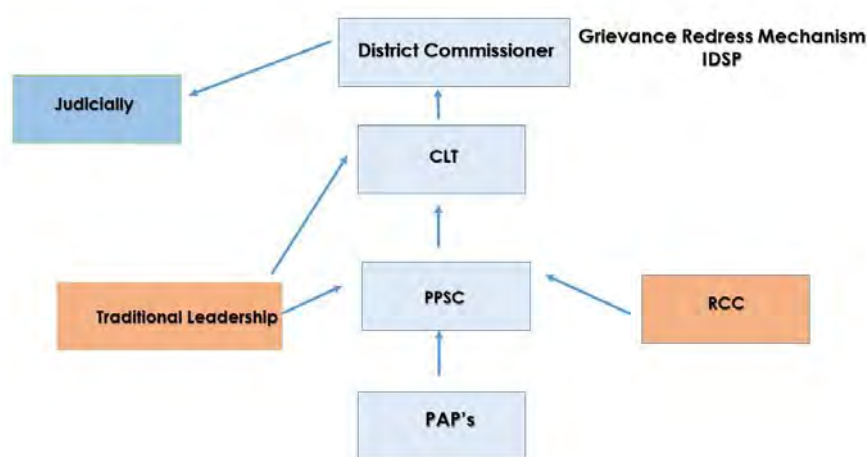
The RCC will decide the Grievance Redress Mechanism but should not be responsible for implementing it. A Grievance Committee should be impartial and it is recommended that it is convened directly within the Office of the DC. It is further recommended that key participants should be the DC's representative, the Chief's Advisor and functionaries from the SSC and PPSC. The Grievance Committee should meet regularly to ensure regular processing of claims. This committee will operate under the auspices of the CLT (or separately pending the setting up of the CLT) but will not be limited to handling grievances related to the CLT or the irrigation schemes.

The mechanism for the grievance resolution is suggested to be as follows.

- Complaints will originate from claimants who will first apply to the PPSC.
- The PPSC will in the first instance attempt to resolve the complaint by explanation and reference to the resettlement implementation guidelines issued by the RCC.
- If this is not successful the PPSC will apply in writing to the RCC on behalf of the claimant. The complaint will be named as a complaint, dated, the claimant named and uniquely located (NRC number, household number, GPS coordinates etc.) and the complaint described. The claimant will suggest a negotiating position. The PPSC Secretariat will witness the complaint, and any of the DLO, Site Facilitator or Block Supervisor will endorse it.
- The RCC receives the complaint and logs it in a complaints book. The main facts of the complaint are logged and the original is filed. The RCC will attempt to address the complaint within ten working days of receipt and notify the PPSC (through the DLO) of action taken. The PPSC will then notify the claimant. If the claimant is not satisfied or has not heard from the RCC/PPSC in ten days, he/she may resubmit the complaint, which then becomes a grievance.
- The grievance will be named as a grievance, dated, the claimant named and uniquely located (NRC number, household number, GPS coordinates etc.) and the grievance described. The PPSC Secretariat will witness the grievance, and any of the DLO, Site Facilitator or Block Supervisor will endorse it.
- Grievances will be passed directly to the DC's office for the attention of the Grievance Committee. The Grievance Committee receives the grievance and logs it in a grievance book. The main facts of the grievance are logged and the

original is filed. The Grievance Committee will check their grievance log with the complaints book of the RCC, ensure procedures have been followed and establish what action the RCC has taken.

- The Grievance Committee will then address the grievance within ten working days of receipt and notify the RCC in writing of their decision together with any instructions for the RCC to comply with. The response will be in writing and a copy filed in the grievance book. The RCC will then notify the PPSC (through the DLO). The PPSC will then notify the claimant. If the claimant is not satisfied, he/she must re-submit the grievance;
- The Grievance Committee will identify this as a “second round” grievance. These will be maintained in a separate filing system;
- In the case of grievances that the Grievance Committee cannot resolve, they will be forwarded with documentation to MAL Safeguard Officer for advice. The claimant will be advised of this action.



The grievance mechanism needs to take into account the provisions of resettlements as practiced by the Resettlement Department of the Office of the Vice President because in case of resettlement dispute involving the PAPs to be resettled, then the aggrieved parties tend to appeal to the Resettlement Department of the Office of the Vice President. The RCC/Grievance Committee should be aware of this.

The Grievance Committee will probably have to sit weekly to discuss and investigate claims. If the number of claims becomes large and/or focussed on one issue, the Grievance Committee will discuss with the RCC on the possibility of amending implementation procedures or compensation rates.

The most usual complaint/grievance will be about the valuation of fixed assets and should be easily solved. Most asset holders have assets substantially below the value of the low cost rural house they will be offered. Only asset holders with property on the borderline or over ZMW 55,000 will be interested in the details of the valuation. More difficult grievances will be related to eligibility for housing, the supply of which will be fixed. The Grievance Committee will have the option to

consider an alternative, the eligibility of claimants with grievances for compensation in cash.

Valuations were made by MLGH Valuations Department and their assessments should be unassailable even in a court of law. In the case of significant time elapsing between valuation and compensation, the valuation could be adjusted by an appropriate inflation index. If a grievance persists the Grievance Committee could request a re-valuation by MLGH.

Dissemination of GRM

In section 14 it is stated that the Resettlement Compensation Committee has responsibility for making sure that RAP judgements are communicated.

Stakeholders at the RAP disclosure meeting agreed to adopt the Grievance Redress Mechanism (GRM) as presented in section 14. The GRM will be translated in local language(s) and forwarded to the PPSC. PPSC members with the assistance of Site Activity Facilitators will communicate the GRM with the group they represent. Furthermore the Agricultural Extension officer at Camp level who has been trained to communicate in local language innovations to local people will include the GRM in his extension package.

It is also agreed that these mechanisms be widely disseminated to all PAPs through National and Local Radio, Newspapers and relevant fora and that National Agriculture Information Service [NAIS] should be in the forefront of disseminating these mechanisms to all relevant parties.

15 MONITORING AND EVALUATION

15.1 Purpose of Monitoring

The RAP monitoring plan is intended to provide practical guidance to RAP implementation and advance notice of problems in implementation. It is also intended to highlight unforeseen difficulties. An example might be the requirement to ensure that not only the displaced but all the affected population get adequate access to rainfed land during construction: there will be no major irrigation on the site until the March – November 2016 irrigation season.

15.2 Institutional Responsibilities

The office of NC-IDSP includes a dedicated M&E Officer who has overall responsibility for monitoring and evaluation of IDSP. This is an important and high-level job and NC-IDSP cannot be expected to do more than insure that an appropriate M&E system for resettlement is in place. The office of NC-IDSP also has a dedicated MAL Safeguards Officer who will be responsible for RAP implementation, and required to report on RAP issues to the World Bank Technical Review Missions that periodically visit IDSP.

The role of CP&CB in RAP implementation is limited to facilitation. As MAL consultants CP&CB will provide the support to the office of NC-IDSP envisaged in their ToR. Specifically, this is advising on disbursement, documentation, M&E and an appropriate management information system. Members of the RCC and IDSP field staff must do the actual work of collecting resettlement data in a form appropriate for monitoring.

Neither CP&CB nor its client NC-IDSP is independent from the project: the latter will be involved in RAP implementation and the former will facilitate it. Therefore neither is well placed to provide an independent monitoring service. However, the World Bank Technical Review Missions, that may include a Safeguard Specialist on the team, will provide some quality assurance. A strong independent monitoring system will need to be established.

For overview of the RAP monitoring process itself, an expert panel is sometimes considered. If periodic World Bank technical supervision is considered to be insufficient, such a panel could be appointed, consisting of local and/or regional consultants. Such a panel would provide a similar overview service for RAP as the Dam Safety Committee does for dam construction and management. IDSP has made arrangements for a safeguards specialist to support the RAP. Note that the findings of the expert panel would normally be disclosed, but there is no obligation to disclose reports prepared by an internal monitoring team. So no expert panel means no public disclosure of on-going RAP implementation.

External consultants will undertake an audit of RAP implementation within 2 years of the irrigation scheme being operational and after 5 years which should, inter alia, assess livelihood restoration status. The final RAP evaluation should be disclosed

15.3 Data Collection

Successful monitoring of RAP implementation depends on rigorous record keeping by the RCC. A set of pro forma will have to be developed to do this: this is the responsibility of CP&CB. The completion of those forms however is not. The forms have not yet been developed, but will include:

- Entitlement certificates for all displaced households, specifying:
 - eligibility for housing,
 - cash compensation if displaced fixed assets exceed the value of the house,
 - cash compensation for perennial crops (if compensated separately),
 - entitlement to allocation of rainfed cultivable land by village headmen;
- Delivery and receipts of entitlements, including by whom, to whom, dates, amounts, areas, condition of assets transferred.
- Grievance logs, including person, date, issue, action taken, resolution (or not) and referral.

An effective baseline data set exists for monitoring and evaluation. The database not only identifies every household head in the Lusitu scheme but also individual household members and contains a wide range of information by household on land holdings, crop areas, cropping patterns, livestock ownership and other socio-economic variables (described in section 3 and section 8.3). The database is a good sample frame for subsequent special purpose monitoring surveys, not only for RAP. In respect of monitoring the RAP itself, a stratified sample can easily be drawn from displaced households to allow an agro-economic comparison with households that were relatively unaffected. This objective approach can be complementary to structured or unstructured questionnaires that will allow displaced households to describe their resettlement experience.

15.4 Monitoring Activities

Monitoring activities will be a full time activity that will require the support of IDSP field workers. The following activities are envisaged:

- Liaison with contractors (responsible for housing, roads, power lines, potable water etc.) to compare divergence from the construction schedule, and therefore the RAP implementation schedule;
- Examination of the RAP implementation schedule to see if there are delays against the construction schedule;
- Verification that the RCC is functioning and entitlements and grievances are handled effectively;
- Identification of any cases of serious hardship resulting from resettlement activities;
- Carry out interviews with PPSC, headmen and individuals to assess satisfaction of the RAP as implemented;
- Carry out spot checks on complainants and grievances to ensure proper functioning of the Grievance system;
- Collation and analysis of the records of the RCC;
- Collation and analysis of Grievance records;
- Summary of resettlement disbursements and compare against the RAP budget.

15.5 Indicators

Because there are over-arching requirements for IDSP M&E it is necessary to avoid duplication and distinguish the monitoring requirements of the resettlement plan, as distinct from the impact of the irrigation project. Indicators have therefore been based on the activity summaries shown in Table 5-1 and Table 5-2 and shown in Table 15-1 below. The preferred indicators are summarised as follows.

For Inputs:

- Evidence of formation and operation of the RCC and Grievance Committee.

For Activities:

- Final and approved compensation rates for all categories of displaced persons;
- Summary of financial transactions between MAL, RCC and site;
- Summary of Grievance log;
- Rainfed allocations of displaced households and impacts on non-displaced.

For Outputs:

- Evidence of communication of RAP procedures and entitlements to community;
- Payment and receipt schedules against entitlement lists;
- Instructions to RCC from Grievance Committee to modify implementation arrangements and response;
- Estimate of adequacy of rainfed cultivation in the Lusitu scheme during the construction period.

For Outcomes:

- Results of satisfaction survey within community;
- Number of houses occupied;
- Construction of other assets on house plots;

- Replacement perennial crops planted;
- Reconstruction of common property;
- Site readiness for next construction phase.

For Impacts:

- Comparison of construction schedule and resettlement implementation and assessment of readiness.

Table 15-1 Indicators for RAP Implementation Monitoring

Responsible	Inputs	Activities	Outputs	Outcomes	Impacts
RCC	Establishment of committee with agreed ToR	List of compensation rates for all displaced categories Demonstrated accounting of fund flow, showing funds applied for by head, funds received, disaggregation by eligible household, disbursement and receipting	Procedural compensation instruction publicised to community	Knowledge in community of resettlement procedures	Resettlement proceeds according to construction schedule
			Entitlements posted in community including:	Number of houses occupied by verified displaced households	
			House entitlements	Construction of other assets on house plot	
			Compensation schedules for assets in excess of house value	Replacement perennial crops planted	
			Perennial crops	Reconstruction of common property	
			Common Property	Area of development area free for incumbrance and vacant ready for construction	
			Land Acquisition (Musakashi only)		
			Payment and receipt schedules against entitlement lists, including		
			house plot allocated by name of households		
			disbursements for assets exceeding value of house		
disbursements for perennial crops					
disbursements for common property					
disbursements for Disturbance allowance					
disbursements for Land Acquisition (Musakashi only)					
Grievance Committee	Establishment of committee with agreed ToR	Grievance log, including: Date received and full documentaton Grievance lists posted in community Period until resolution Number of unresolved/referred grievances	Changes in implementation as a result of grievances	Pending grievances by subject	
				Hardship cases identified	
Village headmen		Compilation of lists of displaced households with plot area and area outside plot and shortfall area Compilation of list of non-displaced households who gave up land for use of displaced, were granted alternative land and who were not granted alternative land			Area of rainfed cultivated land by year

15.6 Reporting

15.6.1 Internal RAP Monitoring Reports

The construction period and therefore the RAP implementation period varies between sites. For a site with a 10-month implementation period a three month internal reporting period is recommended.

The monitoring report would comprise a brief report of 10-15 pages with supporting data as needed, summarising:

- Progress against the construction and RAP implementation schedules, in particular with respect to housing and service construction and allocation, the delivery of state land with 99-year lease to the Community Land Trust and the allocation of rainfed land allocations to displaced persons by village headmen (this last will be difficult to monitor);
- Identification of issues developing and recommendations for action;
- Summary of grievance records, including number, subject, resolution or not;
- Summaries of minutes of meetings held related to RAP implementation or with a RAP content (e.g. RCC, PPSC, site meetings with contractor, etc.);
- Periodic satisfaction survey.

The preparation of internal monitoring reports should presumably be the responsibility of the MAL Safeguards Officer. There should be no institutional problem in turning monitoring recommendations into implementation practicality, given that the Safeguards Office is a key staff member of NC-IDSP. However, the cooperation of the RCC is absolutely crucial to successful implementation. The RCC will be responsible to the DDCC, not IDSP. Any difficulties arising from this divergence in chain of management should be monitored carefully.

15.6.2 Final RAP Evaluation Report

The final evaluation should be carried out, not at the end of the construction period and the completion of the implementation of the RAP, but one year after irrigation water supply is available and used at all Tier 1 and 2 sites. Until then, there will be no demonstrable improvement in household budgets. This would be approximately November 2016, assuming a 10-month construction schedule. Even then, the irrigation scheme will not be operating at full potential. However, the distribution of benefits between households will have been established approximately by the issuance of irrigation allocations by the Community Land Trust.

The final evaluation report should assess:

- if there are significant differences in household budgets between the displaced households and the remainder of the population;
- quality and adequacy of housing provided;
- replanting (or not) of perennial crops;
- if the procedures specified in this RAP had been followed;
- the adequacy of resettlement compared to ZEMA and OP 412 principles;
- Satisfaction survey.

APPENDIX A: HOUSEHOLD LIST AND INDICATIVE ALLOCATIONS

Household number	Name 1	Name 2	For re-location	Fields in Tiers	Household location X	Household location Y	Farm area, ha	Cattle	Goats	Family members	Sub-village of residence	Number of spouses	Number of youth	Food insecure households	Female headed households	FARMSIZE category	Tier 1 allocations (number) 1=0.25 ha, Tier 2 in ha	Difference future allocation equivalent in rainfed minus initial farm size in ha
1	LEONARD	NKANDELA	YES	2.5	697057	8217423	2.81	40	0	7	Mutumbi	1	0	0	0	small	0.74	-0.53
2	ELINESS	MUNYAMA	YES	0	697057	8217423	1.12	0	0	1	Mutumbi	0	0	0	1	small	0.7	0
3	VINANCY	SIMWELA	YES	3.8	697084	8217311	3.18	29	0	7	Mutumbi	1	2	0	0	small	0.75	-0.88
4	ELIZA	SIMWELA	YES	0	697082	8217331	3	0	0	9	Mutumbi	0	4	0	1	small	0.75	0
5	FELISTAS	SIMWELA	YES	0	697094	8217330	2	0	0	8	Mutumbi	0	2	1	1	small	0.72	0
6	MARIA	SIABWIZWIMA	YES	3.7	697040	8217207	2.25	0	0	3	Mutumbi	0	1	0	1	small	0.73	0.01
7	SIABUSU	PEPEKALE	YES	0	697113	8217240	0.75	0	0	3	Mutumbi	1	0	0	0	small	0.69	0
8	BORNFACE	SIABUSU	NO	0	697102	8217241	2.37	0	0	2	Mutumbi	1	0	0	0	small	0.73	0
9	FRED	SIMWELA	YES	0	697107	8217304	0.75	0	0	3	Mutumbi	1	0	0	0	small	0.69	0
10	ANASTASI AND LANGSON	MULUNGU	NO	0	696615	8216986	5.525	8	0	6	Sigambote	1	2	0	0	medium	2.18	0
11	MUUTE	GIFT	NO	0			1.25	0	7	6	ChaliChusya	1	0	0	0	small	0.7	0
12	KELVIN	SIANTUMBU	NO	0	696479	8216741	3.5	0	0	6	ChaliChusya	1	0	1	0	medium	2.13	0
13	VAI	SIABANENE	NO	0			0.854	0	0	1	Luaghago	0	0	0	1	small	0.69	0
14	EDWARD	SI AZWELE	NO	0	696578	8216699	13	8	0	8	Siambote	1	0	0	0	large	1.6	0
15	SIMALUNDU	MOONGA	NO	0	696464	8216742	4.7	0	11	5	Siambote	1	3	1	0	medium	0.8	0
16	SAMSON	SINGUBI	NO	0	696507	8216369	9.5	0	14	7	Sitinkwe	1	2	0	0	medium	2.28	0
17	FENALA	SINGUBI	NO	0			1.5	0	6	4	Sitinkwe	0	1	0	1	small	0.71	0
18	SINGUMBI	AGNESS	NO	0			2	0	3	3	Sitinkwe	0	0	0	1	small	0.72	0
19	KEFAS	MUZYAMA	NO	0	696429	8216358	10	0	13	5	Sitinkwe	1	0	1	0	large	4.55	0
20	BRIAN	SIANYEMBA	NO	0	696389	8216363	5	0	0	4	Sitinkwe	1	0	0	0	medium	2.17	0
21	JACOB	SAYI	NO	0	696490	8216701	7.5	0	18	6		1	1	0	0	medium	2.23	0
22	NYOWANA	SIKWA	NO	5.67			0.908	0	2	3	Muchimba	1	0	0	0	small	0.69	0.47
23	SIANKUBULE	MEZIAS	NO	0			1.125	0	12	5	Muchimba	0	2	1	1	small	0.7	0
24	MWIINGA	SIMALAMBO	NO	0	696597	8216334	3.25	0	15	6	Muchimba	1	3	0	0	small	0.75	0
25	ELIAS	MUWELE	NO	0	696492	8215800	2.625	11	5	4	Maunga	1	0	0	0	small	0.74	0
26	SIAMUBBOBBO	ARTHER	NO	0			0.75	0	16	4	Maunga	1	0	1	0	small	0.69	0
27	CHARLES	SIABBUWA	NO	0.96	696375	8216143	0.5	0	1	3	Maunga	0	0	1	0	very small	0.14	-0.22
28	DICKSON	SITINKWE	NO	2.8	696272	8216162	5.7	5	2	8	Maunga	1	1	0	0	medium	0.8	-4.10
29	ANASTASIA	SITINKWE	NO	0			0.3	0	0	5	Maunga	0	0	1	1	very small	0.13	0
30	SIANYULU	SMITH	YES	0	696634	8218239	1.5	0	11	8	Syangulu	1	1	0	0	small	0.71	0
31	PATSON	MUKONKA	NO	0	696112	8217342	12.25	0	16	15	Siakasunka	2	0	1	0	large	4	0
32	CHARITY	SIMAMBA	NO	0.67			1	0	1	5	Milano Village	0	1	1	1	small	0.7	0.40
33	PETER	SIABBUWA	NO	1.3	696269	8216490	0.565	0	0	7	Milawo	1	3	1	0	very small	0.14	-0.29
34	ROBERT	MUKOMBA	NO	0.6			2.75	0	0	4	Milawo	1	0	0	0	small	0.74	-1.27
35	ESTHER AND MONDAY	SAI	NO	0	696368	8216558	0.5	0	13	3	Milawo	1	0	1	0	very small	0.14	0

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36	ELIVIA	SIAMALOB	YES	0			9.025	0	0	6	Mugaule	0	0	0	1	medium	2.27	0
37	SIANYULU	BERTHA	NO	0			3.5	0	5	2	Mapenzi	0	0	1	1	medium	2.13	0
38	SARA	SIMUNENE	NO	0			1.212	0	3	1	Mapenzi	0	0	0	1	small	0.7	0
39	MIMOH	SIABBUWA	YES	0	696426	8216150	1.7	2	6	3	Mapenzi	1	0	0	0	small	0.71	0
40	RICKY	NKABA	NO	0	696695	8216718	0.75	0	0	5	Mapenzi	1	0	1	0	small	0.69	0
41	LIST	SIALULENGA	NO	0	696515	8216955	1.5	0	0	2	Lwangulo	1	0	1	0	small	0.71	0
42	SHANGA	KUNJE	NO	0	696455	8216683	0.25	0	0	4		1	0	1	0	very small	0.13	0
43	LUBINGA	RABECCA	NO	0			1.035	0	7	3	Maunga	0	0	1	1	small	0.7	0
44	JOHN	SAINA	NO	0	696159	8216580	1.075	0	5	4	Mulawo	3	0	1	0	small	0.7	0
45	KISMORE	SAI	NO	0	696411	8216592	1.5	10	1	3	Lelemeke	1	0	0	0	small	0.71	0
46	GLORIA	SAI	NO	1.8	696444	8216684	2.375	0	38	5	Lelemeke	0	0	0	1	small	0.73	-0.92
47	NKADELA	ARNOLD	NO	0	696681	8217193	1.625	3	10	5	Mutumbi	1	0	1	0	small	0.71	0
48	SITINKWE	SOPHIA	NO	0	696551	8216929	8.025	0	26	9	Lwanguluko	0	3	0	1	medium	2.24	0
49	ELIZABETH	SIANKWEMBO	NO	0	695905	8217855	1.75	0	0	6	Simunza	0	2	1	1	small	0.72	0
50	KAHILU	RABECCA	YES	0	697182	8216955	0.12	0	0	4	Siambote	0	0	1	1	very small	0.13	0
51	MASANI	ESNART	NO	0	697172	8216910	2.2	0	2	3	Siambote	0	0	1	1	small	0.73	0
52	KAPOBA	CHRISPINE KASHEKA	YES	0	697043	8216614	1.81	0	0	3	Muchibu	0	0	1	0	small	0.72	0
53	HANDIMA	DOROTHY	YES	0	697027	8216533	1.5	0	0	3	Muchibu	0	1	0	1	small	0.71	0
54	SIKAPANDE	SARIA	YES	0	697060	8216425	0.24	0	0	2	Muchibu	0	0	1	1	very small	0.13	0
55	SIAMPOLA	LOVENESS	YES	0	697105	8217262	0.75	0	0	5	Mutumbi	0	0	1	1	small	0.69	0
56	MULUNGU	FRANCIS	NO	0	696890	8216678	1.75	0	0	4	Muchimba	1	0	0	0	small	0.72	0
57	MULUNGU	MAXWELL	NO	0	696809	8216619	2.5	0	0	2	Muchimba	1	0	0	0	small	0.73	0
58	MULUNGU	ELINA	NO	0	696836	8216611	1.87	0	4	10	Muchimba	0	0	1	1	small	0.72	0
59	MULUMBU	JAMISON	NO	1.1			6.5	0	10	5	Muchimba	1	0	0	0	medium	2.2	-2.10
60	ERNEST	KACHACHA	NO	0	696725	8217509	2.25	0	0	8	Makololo	1	0	1	0	small	0.73	0
61	RODRICK	SIAMABOBE	NO	0	696190	8217423	2.25	0	3	8	Mugaule	1	0	1	0	small	0.73	0
62	TRYFORD	KAPULO	NO	0	696281	8217483	3.25	0	10	8	Mugaule	1	0	1	0	small	0.75	0
63	ABEL	SIGUNDU	NO	0	696671	8217850	2.25	0	2	6	Sigundu	1	0	0	0	small	0.73	0
64	LAZARUS	SIANKUSULE	NO	3.4	696209	8216331	3.25	75	20	6	Sitinkwe	1	0	0	0	small	0.75	-1.75
65	GIBSON	SIANKUSULE	NO	2.7	696194	8216262	3.05	15	0	5	Sitinkwe	1	1	0	0	small	0.75	-1.55
66	DAINESS	MUKULI	NO	0			1.1	1	0	6	Sitinkwe	0	0	1	1	small	0.7	0
67	ACKIM	SANA	NO	0	696509	8216454	6.125	11	3	6	Milawo	1	0	0	0	medium	2.19	0
68	SIGUNDU	BELITA	NO	0	696516	8217698	0.75	0	0	7	ChaliChusya	0	2	1	1	small	0.69	0
69	DAPENI	MULUNGU	NO	0	696818	8216604	2.75	0	0	3	Muchimba	1	0	0	0	small	0.74	0
70	LAWRANCE	SIAMAILI	NO	1.1	697162	8217080	2.7	0	0	6	Shambote	1	0	0	0	small	0.74	-1.22
71	KAHILU	LEONARD KABITA	YES	0	697177	8216987	3.5	0	0	10	Shambote	1	4	0	0	medium	2.13	0

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72	BRIDGET	MWEETWA	YES	0	697180	8216923	1.75	0	0	6	Shambote	0	0	0	1	small	0.72	0
73	ERISON	SIKAPANDE	YES	0	697047	8216473	4.181	0	0	8	Muchimba	1	1	0	0	medium	2.15	0
74	RICHARD	MAGGWU	NO	0.9	696990	8216459	6	0	0	7	Muchimba	1	0	0	0	medium	2.19	-1.62
75	MPUNDU	MWIKE	NO	0	696964	8216571	6.75	0	0	7	Muchimba	1	0	0	0	medium	2.21	0
76	RICHARD	KABITA	YES	0	697013	8216408	2.08	0	0	9	Muchimba	1	0	0	0	small	0.72	0
77	NOMAI	MULUNGU	NO	0	696906	8216654	2.37	0	0	3	Muchimba	0	0	0	1	small	0.73	0
78	BRIDGET	MUWELE	NO	0			0.75	5	21	10	Muchimba	0	2	1	1	small	0.69	0
79	LAILA	SITINKWE	NO	0	696571	8216166	1.18	0	0	6	Sitinkwe	0	1	0	1	small	0.7	0
80	MALITA	SIAMWIINDE	NO	0	696132	8216310	3.025	11	0	6	Sitinkwe	0	2	0	1	small	0.75	0
81	JEFASON	JANI	NO	0	696371	8216416	1.075	4	0	6	Sitinkwe	1	1	1	0	small	0.7	0
82	THOMAS	SAINA	NO	0	696524	8216476	0.825	0	10	7	Sitinkwe	1	1	1	0	small	0.69	0
83	DESMOND	SIGUNDU	NO	0	696686	8217886	1.75	0	0	8	Sigundu	1	0	0	0	small	0.72	0
84	JOFFERY	SIMALUNDU	NO	0.8	696503	8216772	0.775	0	30	6		1	2	1	0	small	0.69	0.61
85	SIMON	HAKULYA	NO	0			9.12	0	0	8	Simanyangu	1	2	0	0	medium	2.27	0
86	CLEMENT	NKANDELA	NO	0	696815	8217296	7	0	0	7	Mutumbi	1	0	0	0	medium	2.22	0
87	DOMINIC	SIANA	NO	0	696573	8216455	3.2	0	0	9	Milano	1	1	0	0	small	0.75	0
88	CHRISY	SIGUNDU	NO	0	696659	8217876	6	0	4	5	Sigundu	1	0	0	0	medium	1.6	0
89	BETRINA	CHATUNGWA	NO	0			4.1	0	0	5	Muyaule	0	0	1	1	medium	2.14	0
90	ADRIA	TEMBO	NO	0			6	0	4	8	Sikalonga	1	1	0	0	medium	0.8	0
91	SIAMULUWA	BEN (LUCIA)	NO	0	696557	8218596	14.25	0	60	10	Tinde	1	1	0	0	large	4.65	0
92	NKWAZI	CHAMUKUYU	NO	0	696569	8217611	3.5	0	12	4	Muchibu	1	0	1	0	medium	2.13	0
93	CARLOS	CHIKOONDO	NO	0	696561	8218016	2.87	0	0	3	Sigundu	1	0	0	0	small	0.74	0
94	COSTAIN	SYANZYAMBULA	NO	0	696603	8217962	3.5	0	0	5	Sigundu	1	0	0	0	medium	2.13	0
95	MARITA	MAZILA	YES	0			0.7	3	18	1	Makololo	0	0	0	1	small	0.69	0
96	SELINA	JEMAIMA	NO	0			8.1	0	0	8		0	3	0	1	medium	2.24	0
97	MILIAS	SIANYULU	NO	0	696211	8218651	8	0	0	12	Tinde	2	3	0	0	medium	2.24	0
98	KELVIN	SIANYULU	YES	0	696479	8216741	5	0	0	5	Sianyulu	2	0	0	0	medium	2.17	0
99	MINISTER	SIMADABWALI	YES	0	696588	8218248	4	0	0	12	Simanyangu	2	1	0	0	medium	2.14	0
100	KENNDY	NTAULO	YES	0	696660	8218659	5.5	0	0	9	Simanyangu	1	1	0	0	medium	2.18	0
101	MIRIED	DOBOLA	NO	0			0.275	0	0	6	Tinde	0	0	1	1	very small	0.13	0
102	STANLEY	NTAULO	YES	0	696651	8218622	6.5	0	0	7	Simanyangu	1	0	0	0	medium	1.6	0
103	DANNY	SIGUNDU	NO	0	696665	8217817	4	7	5	11	ChaliChusya	1	3	0	0	medium	2.14	0
104	SIABANENE	ATHENS	NO	0	696566	8217218	5.5	0	0	8	Kakunka	2	0	0	0	medium	2.18	0
105	MAKENA	SIAMAILI	NO	0			2.75	21	16	9	Kakunka	1	3	0	0	small	0.74	0
106	STRANGE	MANYIKA	NO	0	696180	8216506	3.025	0	0	4	Sitinkwe	1	0	1	0	small	0.75	0
107	MICK	MAZILA	NO	0	696273	8218520	0.85	0	0	5	Sianyulu	2	0	1	0	small	0.69	0

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108	BITWELL	SIANKWEMBO	NO	0	696119	8217651	5.75	0	0	11	Simunze	3	2	0	0	medium	2.18	0
109	FRIDAY	MAGWALO	NO	0	696242	8217687	1.25	0	0	6	Simunza	2	0	1	0	small	0.7	0
110	SIMUNZA	SUSAN AND LOYD	NO	0			1.75	0	0	1	Muyaule	0	0	0	0	small	0.72	0
111	CHRISTOPHER	SIMALAMBO	YES	1.7	696412	8218265	3.25	0	0	8	Sianyulu	1	1	0	0	small	0.75	-0.95
112	CHILEKE	EDGAR	NO	0	696726	8217674	3.75	0	0	6	Makololo	1	1	0	0	medium	2.14	0
113	FISHER	SIANYULU	YES	0	696525	8218590	8.1	0	0	6	Tinde	0	3	0	0	medium	2.24	0
114	LOVENESS	MUVOMBO	NO	0	696378	8217471	0.375	0	0	7	Muyaule	0	2	1	1	very small	0.14	0
115	PRECIOUS	SIAMALICHAULA	NO	0			0.775	0	0	5	Simanyangu	0	0	1	1	small	0.69	0
116	WISELY	MUDENDA	YES	0	696647	8218164	7.5	0	0	10	Sianyulu	1	2	0	0	medium	2.23	0
117	SIGUNDU	DAFENI	NO	0	696734	8217872	2	0	0	6	Sigundu	0	0	1	0	small	0.72	0
118	KANSHETY	SIGUNDU	NO	0	696727	8217890	3	0	0	8	Sigundu	1	1	1	0	small	0.75	0
119	FRIDAY	NSANGANYA	YES	0	696388	8218412	2	0	0	7	Sianyulu	1	0	1	0	small	0.72	0
120	MARY	MUVOMBO	NO	0	696392	8217540	3.025	0	0	6	Muyaule	0	0	1	1	small	0.75	0
121	DICKSON	TENDEKA	NO	0	696319	8218631	1.25	0	0	7	Simanyangu	1	2	0	0	small	0.7	0
122	ABEL	SIAMPOLA	NO	0	696718	8218007	7.5	0	0	6	ChaliChusya	1	2	0	0	medium	2.23	0
123	GILDAH	SIACHEKA	NO	2.4	696590	8217201	2.5	0	0	5	Kakunka	1	1	0	1	small	0.73	-1.04
125	ADVENT	MUUTE	NO	0	696499	8217688	0.265	0	0	4	Sigundu	1	0	1	0	very small	0.13	0
126	KALISTO	SIGUNDU	NO	0			0.62	0	0	4	Makololo	1	0	1	0	very small	0.14	0
127	NEVERS	CHIMWELA	NO	0			4.5	0	0	3	Mutumbi	1	0	0	0	medium	2.15	0
128	SIATUMBU	LITULU	YES	0			3.5	0	0	4	ChaliChusya	1	0	0	0	medium	2.13	0
129	RABBECCA	SIAULULA	NO	1.2	696709	8217115	0.25	0	0	5	Mutumbi	0	0	1	1	very small	0.13	0.01
130	WINNIE	CHAMUKUYU	NO	0	696512	8219318	1.93	0	0	3	Simanyangu	0	0	0	1	small	0.72	0
131	FISTY	SIAMLOPA	NO	0	696717	8217977	6.25	0	0	4	Sigundu	1	0	0	0	medium	2.2	0
132	KEPSON	MANYIKA	NO	0	696130	8216484	8.025	0	0	9	Sitinkwe	1	2	0	0	medium	2.24	0
133	MUSAKA	BUYKO	NO	0			3.5	0	0	8	Sigundu	1	1	1	0	medium	2.13	0
134	SIANKWEMBO	EVERISTO	NO	0			1.5	0	0	8	Simunze	2	0	1	0	small	0.71	0
135	ELIJAH	SIAMNSONE	NO	4.9	696245	8216386	11.5	0	0	13	Mnlawn	1	1	0	0	large	4.58	-2.34
136	ALFRED	CHIKONDO	NO	0	696606	8218024	21	0	0	6	Chikondo	2	2	0	0	Tier 2	2.63	0.00
137	ANICK	CHIKONDO	NO	0	696560	8218042	6	0	0	4	Sigundu	1	0	0	0	medium	2.19	0
138	HENRY	SIAMAILI	NO	0			10	0	0	5	Sianyulu	1	0	0	0	large	4.55	0
139	KENNETH	SIANYULU	YES	0			6	0	0	8	Sianyulu	1	2	0	0	medium	2.19	0
140	MASANI	FANWELL	YES	0	696655	8218220	1.525	0	0	7	Sianyulu	1	0	1	0	small	0.71	0
141	DYSON	NSANGANYA	YES	0	696351	8218363	5	0	0	7	Sianyulu	1	0	0	0	medium	2.17	0
142	KENFORD	MAZILA	NO	0	696690	8217722	4.2	0	0	3	ChaliChusya	1	0	0	0	medium	1.6	0
143	STANFORD	SIAKALOPA	NO	0			0	0	0	4		1	2	1	0	landless	0.25	0
144	SIMON	NKABA	NO	22.4	696712	8216816	16	0	0	11		1	4	0	0	Tier 2	2.00	0.00

Household number	Name 1	Name 2	For re-location	Fields in Tiers	Household location X	Household location Y	Farm area, ha	Cattle	Goats	Family members	Sub-village of residence	Number of spouses	Number of youth	Food insecure households	Female headed households	FARMSIZE category	Tier 1 allocations (number) 1=0.25 ha, Tier 2 in ha	Difference future allocation equivalent in rainfed minus initial farm size in ha
145	LUCIA	SIANUNGU	YES	0	696639	8218627	1.2	0	0	1	Simanyangu	0	0	0	1	small	0.7	0
146	SIABANENE	HITRA	NO	0	696582	8217217	2.5	0	0	3	Kakunka	1	0	0	0	small	0.73	0
147	BOSTON	NTAULO	YES	0	696695	8218640	3.1	0	0	5	Simanyangu	1	0	0	0	small	0.75	0
148	BBOXI	WIRRAND	NO	0	696150	8217479	8.25	0	0	7	Sigankasunka	1	0	0	0	medium	2.25	0
149	REGINAH	SIKWELELE	YES	0	696519	8218181	11.3	0	0	6	Sianyulu	0	0	0	1	large	2.4	0
150	WILSON	MUVOMBO	NO	0	696406	8217525	4.5	0	0	3	Muyaule	1	0	0	0	medium	1.6	0
151	MARY	MABWALULA	NO	0	696402	8217544	1	0	0	2	Muyaule	0	0	0	1	small	0.7	0
152	ANDSON	SIAMAKOBE	NO	0	696156	8217295	2.25	0	0	3	Kakunka	1	0	0	0	small	0.73	0
153	JANY	SIAMBUNDA	NO	0	696214	8217454	1.03	0	0	4	Muyaule	0	3	0	1	small	0.7	0
154	ANNAH	SIAMALI	NO	0	696638	8217677	2.25	0	0	6	Makololo	0	2	0	1	small	0.73	0
155	JANE	KUKULE	NO	0			1.75	0	0	6	Lelemeke	0	1	0	1	small	0.72	0
156	SALOMY	SIAMUDYO	NO	0			25	0	0	6	Muyaule	0	1	1	1	Tier 2	3.13	0.00
157	ELINA	KAPULO	NO	0			1.25	0	0	3	Simunza	0	0	1	1	small	0.7	0
158	JONATHAN	SAI	NO	3.3	696428	8216646	3.25	0	0	2	Lelemeke	1	0	0	0	small	0.75	-1.75
159	JOHN	SAINA	NO	0	696159	8216580	12	0	0	4	Milawo	1	1	0	0	large	4.6	0
160	MICHEALS	SAI	NO	0			3.25	0	0	6	Lelemeke	1	0	0	0	small	0.75	0
161	MARIA	SIMUNYEMA	NO	0			0.25	0	0	1	Lelemeke	0	0	1	1	very small	0.13	0
162	SARA	NKANDELA	NO	0	696618	8216261	0.6	0	0	1	Muchimba	0	0	0	1	very small	0.14	0
163	NORIA	SAINA	NO	0	696560	8216424	1.5	0	0	5	Sitinkwe	0	2	1	1	small	0.71	0
164	MILLER	SIAZWELA	NO	1.45			2.2	0	0	4	Siakasunka	0	0	0	1	small	0.73	-0.74
165	MIGGIE	SIAZWELA	NO	0.9	696264	8216576	2.25	0	0	2	Lelemeke	1	0	0	0	small	0.73	-0.79
166	SIAMWALI	SIKWALI	NO	0			1	0	0	1	Sitinkwe	0	0	0	1	small	0.7	0
167	EVELINA	SIKATIKA	NO	0			0	0	0	1	Lelemeke	0	0	1	1	landless	0.25	0
168	ASHWELL	MASANI	NO	0	696662	8216865	0	0	0	1	Lwanguloko	0	0	1	0	landless	0.25	0
169	ANNAH	MUWELE	NO	0			0	0	0	1	Siambote	0	0	1	1	landless	0.25	0
170	ARNOLD	SIKABONDO	NO	0	696693	82176649	4.12	0	0	2	Lelemeke	1	0	0	0	medium	2.14	0
171	VINCENT	MUWELE	NO	0			1.75	0	0	2	Maunga	1	0	0	0	small	0.72	0
172	JESSY	SITINKWE	NO	0	696537	8216546	1.5	0	0	1	Milawo	0	0	0	1	small	0.71	0
173	FRIDAY	SITINKWE	NO	0			5.5	0	0	1	Muchibu	0	0	0	0	medium	2.18	0
174	ZICHELELE	SIGUNDU	NO	0	696607	8216432	1.5	0	0	1	Milawo	0	0	0	1	small	0.71	0
175	GEORGE	SITINKWE	NO	0	696503	8216584	2.5	0	0	2	Milawo	1	0	0	0	small	0.73	0
176	JESSY	NKABA	NO	0	696576	8216776	1	0	0	1	Siambote	0	0	0	1	small	0.7	0
177	CRIDIENCE	SIALULENGA	NO	0	696558	8216990	1.25	0	0	1	Siambote	0	0	0	0	small	0.7	0
178	REYNOLD	SIAMALI	NO	0			2.75	0	0	2	Kakunka	1	0	0	0	small	0.74	0
179	MANGALITA	MULEYA	NO	1.2			1.5	0	0	1	Kakunka	0	0	0	1	small	0.71	-0.08
180	EDSON	SINABULEYA	NO	0	696202	8216632	6.32	0	0	2	Milawo	1	0	0	0	medium	2.2	0

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181	GODWELL	MULUNGU	NO	0			2.35	0	0	1	Muchibu	0	0	0	0	small	0.73	0
182	PEDZAI	MANKOMSA	YES	0			0.25	0	0	2	Milawo	0	0	1	1	very small	0.13	0
183	WEBBY	KACHACHA	NO	0	696681	8217646	0	0	0	1	Makololo	0	0	1	0	landless	0.25	0
184	WESY	KILYI	NO	0	696298	8216760	0	0	0	1	Lelemeke	0	0	1	0	landless	0.25	0
185	MARTIN	SITINKWE	NO	0	696515	8216574	0	0	0	1	Milawo	0	0	1	0	landless	0.25	0
187	EDITH	NKABA	NO	0	696695	8216718	0	0	0	1	Siakasunka	0	0	1	1	landless	0.25	0
188	TELIA	NKOMESI	NO	0			0	0	0	1	Siakasunka	0	0	1	1	landless	0.25	0
189	FANWELL	SIABBUWA	NO	0			0	0	0	1	Milawo	0	0	1	0	landless	0.25	0
190	RIGENT	SIMUNYEMU	NO	0	696298	8216832	3.32	0	0	2	Lilemuke	1	0	1	0	medium	0.8	0
191	ETETEDA	SIAKANYANKONDO	NO	0			0.275	0	0	3	Sitinkwe	0	0	1	1	very small	0.13	0
192	JULVETA	MBUTI	NO	0	696244	8216204	0.775	0	0	3	Sitinkwe	0	0	1	1	small	0.69	0
193	PEARSON	SITINKWE	NO	2.1	696548	8216226	2	10	0	8	Milawo	1	1	1	0	small	0.72	-0.56
194	ANASTAZIA	SITINKWE	NO	2.5			0.3	0	0	5	Maunga	0	0	1	1	very small	0.13	-0.04
195			NO	0									0			#N/A		0
196	KISION	NTAULU	YES	0	696614	8218613	8.5	0	0	8	Simangangu	1	2	0	0	medium	2.25	0
197	ENELESY	BOKESY	NO	0	696173	8217366	15	0	0	2	Muyaule	0	0	0	1	large	4.67	0
198	JOSAMU	SIANYULU	NO	0	696313	8218590	1.25	8	15	2	Sianyulu	1	0	0	0	small	0.7	0
199	ETETEDA	SIAKANYANKONDO	NO	0			0.275	3	0	3	Sitinkwe	0	0	1	1	very small	0.13	0
200	SABETA	SIAMAKOBE	NO	0			5	0	0	1	Siakasunka	0	0	0	1	medium	2.17	0
201	SARA	JANI	NO	0	696328	8216403	0.25	0	0	2	Sitinkwe	0	0	1	1	very small	0.13	0
202	SALIYA	MULUNGU	NO	0			0.025	0	0	1	Simunza	0	0	1	1	very small	0.13	0
203	JULVETA	MBUTI	NO	0	696244	8216204	0.775	0	0	3	Sitinkwe	0	0	1	1	small	0.69	0
204	LABBANI	SIAMAILI	YES	0	697029	8217213	0.25	0	0	3	Mutumbi	1	0	1	0	very small	0.13	0
205	HUMPHREY	CHIKONDO	NO	0			3.6	0	4	3	ChaliChusya	1	0	0	0	medium	2.13	0
206	SOPIYA	CHAPUNGUNDU	NO	0			1.62	0	1	3	Mutumbi	0	1	0	1	small	0.71	0
207	GODFREY	SIANKWEMBO	NO	0	696210	8217701	0.5	0	0	1	Simunza	0	0	0	0	very small	0.14	0
208	ELINA	CHINYAMA	NO	0	696026	8217599	0.5	0	0	1	Simunza	0	0	1	0	very small	0.14	0
209	DAIZA	SIAMAGANTA	NO	0	696546	8217689	2.3	0	0	2	ChaliChusya	0	0	0	1	small	0.73	0
210	COSMAS	SIANKWEMBO	NO	0	695893	8217683	0.5	0	0	1	Simunza	0	0	0	0	very small	0.14	0
211	CHIKONDO	CHILUBALE	NO	0			1.5	0	0	2	Simunza	1	0	1	0	small	0.71	0
212	DORICA	CHIKONKO	NO	0	696232	8218569	4.5	0	0	1	Sianyulu	0	0	0	1	medium	2.15	0
213	SALIYA	SIANYULU	NO	0	696279	8218564	0.2	0	0	1		0	0	1	1	very small	0.13	0
214	MARTHA	SIANYULU	YES	0	696646	8218282	2.25	0	0	1	Sianyulu	0	0	0	1	small	0.73	0
215	SIGUNDU	JELITA	NO	0	696629	8217949	5.75	0	0	1	Sigundu	0	0	0	1	medium	2.18	0
216	EUNICE	SIMWELA	NO	0.8	697031	8217174	1.37	0	0	1	Mutumbi	0	0	0	1	small	0.71	0.05
217	MAGALITA	SITINKWE	NO	0	696456	8215811	6.5	0	0	1	Sitinkwe	0	0	0	1	medium	2.2	0

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218	GIFT	SIAMPOLA	NO	0			6.25	0	0	2	Muyaule	0	0	0	0	medium	2.2	0
219	MAZILA	MAPENZI	YES	0	696517	8218200	0	0	0	2	Sianyulu	0	0	1	1	land less	0.25	0
220	FALLOWS	SIANYULU	NO	0			7.5	3	3	2	Simanyangu	1	0	0	0	medium	2.23	0
221	MONDE	PAPIA SAI	NO	0			1.65	0	2	2	Muchimba	0	0	0	1	small	0.71	0
222	ESTHER	SIMWELA	YES	0			0.81	0	0	2	Mutimbi	0	0	1	1	small	0.69	0
223	SIALUKUBA	JELIN	YES	0.37	696402	8218287	0.62	0	0	2	Sianyulu	0	0	0	1	very small	0.14	0.46
224	EDWARD	MWALE	YES	0	696470	8218526	5	2	2	3	Simanyangu	0	0	0	0	medium	2.17	0
225	POULPHER	MUVOMBO	NO	0			5	0	11	3		1	0	0	0	medium	2.17	0
226	CHAMUNKUYU	CHRISTOPHER	NO	0	696458	82185	0	0	0	3	Simanyangu	1	0	1	0	landless	0.25	0
227	MIKI	KANDELA	NO	0	696833	8217293	2	0	0	3	Mutumbi	1	0	0	0	small	0.72	0
228	SIMUNZA	LYFORD	NO	0	696650	8217961	3.62	0	0	3	Sigundu	1	0	0	0	medium	2.13	0
229	MUKONKA	DENMARK	NO	0	696090	8217336	7	1	0	3	Siakasunka	1	0	0	0	medium	2.22	0
230	WINNIE	CHAMUNKUYU	NO	0	696512	8219318	0.99	0	0	3	Simanyangu	0	0	1	1	small	0.7	0
231	ANIK	CHIKOONDO	NO	0			1.25	0	0	3	Simanyangu	1	0	0	0	small	0.7	0
232	NELIA	SIAMUKAMBA	NO	0			1.12	0	8	3	Kakunka	0	1	1	1	small	0.7	0
233	PAUL	ZIMOTELA	NO	0			2.25	0	0	3	ChaliChusya	1	0	0	0	small	0.73	0
234	ADRIAN	SIKANYANKONDO	NO	0	696447	8216294	6.025	0	0	3	Sitinkwe	1	0	0	0	medium	2.19	0
235	BOYD	SIGUNDU	NO	0	696702	8217876	1.275	0	0	3	Sigundu	1	0	1	0	small	0.7	0
236	DOROTHY	SINABULEYA	NO	0	696003	8217501	2	0	2	3	Simunza	0	1	0	1	small	0.72	0
237	HAROLD	SIANKWEMBO	NO	0	696147	8217639	2.5	0	0	4	Simunza	1	0	1	0	small	0.73	0
238	LINENI	SAYI	NO	0	696331	8216702	0.75	0	11	4	Lwanguluko	1	0	1	0	small	0.69	0
239	SIMON (FIRST)	CHAMUNKUYU	NO	0	696248	8219272	16.25	100	150	4	Simanyangu	1	0	0	0	Tier 2	2.03	0.00
240	CHINYAMA	MALITA	NO	0	696045	8217641	1.75	0	0	4	Simunza	0	1	1	1	small	0.72	0
241	FELISTER	LUO	NO	0			0.25	0	0	4	Siakasunka	0	0	1	1	very small	0.13	0
242	NKANDELA	SOLOMON	NO	1.3	696597	8217400	11	0	0	4	Mutumbi	1	0	0	0	large	2.4	-6.20
243	RICHARD	SIABANTU	NO	0			7.15	0	2	3	Simunza	1	0	0	0	medium	2.22	0
244	MUVOMBO	DYLOSY	NO	0	696342	6217541	3	0	0	3	Simunza	1	0	0	0	small	0.75	0
245	KELVIN	SIAMUVWAMBA	NO	0			0.525	0	0	3	Siakasunka	1	0	1	0	very small	0.14	0
246	SANDWELL	MAZILA	YES	0			27	0	20	3	Makololo	1	0	0	0	Tier 2	3.38	0.00
247	CONFIDENCE	LAGISI	NO	0	696127	8217433	5.5	0	0	3	Siasunga	1	0	0	0	medium	2.18	0
248	ERISON	SIKAPANDE	NO	1.6	697047	8216473	4	0	0	1	Muchimba	0	0	0	0	medium	1.6	-0.80
249	MULUNGU	LANGSON	NO	4.1	696723	8218010	2	0	0	5	Sigundu	1	0	0	0	small	0.72	-0.56
250	OBBY	SIGUNDU	YES	0	696611	8217946	3	0	0	5	Sigundu	1	0	0	0	small	0.75	0
251	HARRISON	NTAULU	YES	0	696516	8218741	4.1	0	0	8	Simanyangu	1	1	1	0	medium	2.14	0
252	BLACKSON	SIMADDABWALI	YES	0	696556	8218316	2.5	5	2	5	Tinde	1	0	0	0	small	0.73	0
253	TEDDY	MUTE	NO	0			1.25	0	0	6	ChaliChusya	1	0	0	0	small	0.7	0

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254	JOHNS	GOMONDE	NO	0	695838	8217776	6.25	2	3	7	ChaliChusya	1	0	0	0	medium	2.2	0
255	EVER	SIAMUKUNYA	NO	0	696000	8217784	10.5	10	5	7	Simunza	1	0	0	0	large	3.2	0
256	CHIKOONDO	JENNY	NO	0			6.25	1	16	6	Chikondo	0	2	0	1	medium	2.2	0
257	SIAWULULA	NOLISS	NO	0			3	0	0	8	Mutumbi	1	2	1	0	small	0.75	0
258	SIAMAILI	LAWRENCE	YES	0	697162	8217080	14	0	9	6	Mutumbi	1	0	0	0	large	3.2	0
259	CHINUGWA	VICTOR	NO	0.8	696657	8217113	0	0	0	6	Mutumbi	1	0	1	0	landless	0.25	0.50
260	MOFFAT	SAI	NO	1	696469	8216661	12.25	44	4	6	Muchimba	1	2	0	0	large	4	0
261	SIANKWEMBO	CRACKSON	NO	0	695989	8217569	0.625	3	14	8	Simunza	1	1	1	0	very small	0.14	0
262	KALISTO	SHAMAKUNYA	NO	0			15.5	0	4	7	Simanyangu	1	0	0	0	Tier 2	1.94	0.00
263	MUWELE	ADIJAI	NO	0	696479	8215832	3.22	12	0	5	Sitinkwe	0	0	0	0	small	0.75	0
264	JOSEPH	SIAMALICHAULA	NO	0	696285	8218693	6.25	0	0	8	Sinanyangu	1	0	0	0	medium	2.2	0
265	LITANA	SIANZALA	NO	0	696232	8218767	1.5	0	0	7	Simanyangu	0	1	0	1	small	0.71	0
266	JOSIAS	SIANYULU	YES	0	696307	8218379	4.94	0	0	9	Sianyulu	1	2	0	0	medium	2.16	0
267	ROBSON	SIAMAKOBE	NO	0.85	696262	8217398	14	11	3	4	Muyaule	1	1	0	0	large	4.64	-4.92
268	MAKOMBA	SECKISAI	NO	0			1.262	0	0	4	Mutumbi	0	0	0	1	small	0.7	0
269	PATSON	NKANDELA	NO	0	696502	8217322	0.525	0	0	8	Mutumbi	1	1	1	0	very small	0.14	0
270	KISION	NTAULU	NO	0	696614	8218613	8.5	0	0	8	Simanyangu	1	2	0	0	medium	2.25	0
271	GEOFREY	SIGUNDU	NO	0	696648	8217945	6.25	0	0	7	Sigundu	1	1	0	0	medium	2.2	0
272	MUVUMBO	COSWELL	NO	0	696318	8217537	0.7	0	8	7	Simunza	1	0	1	0	small	0.69	0
273	BENSON	SIMANYEKU	YES	0	696894	8217425	5.5	0	0	9	Kakunka	1	1	1	0	medium	0.8	0
274	MOSES	SIKWELELE	YES	0	696891	8217530	8.5	0	0	11	Mutumbi	1	1	0	0	medium	2.25	0
275	GILBERT	SIAMWALA	NO	0	696570	8219275	10	13	9	14	Simanyangu	1	1	0	0	large	4.55	0
276	SIAZWALA	POISA	NO	0.5			17	23	9	12	Sitinkwe	1	2	0	1	Tier 2	2.13	0.00
277	BEAUTY (SECOND)	CHAMUNKUYU	NO	0	696232	8218767	0.75	0	0	6	Sinamanyango	0	2	1	1	small	0.69	0
278	GETRUDE	MANYIKA	NO	0			5.2	0	9	7		0	0	0	1	medium	2.17	0
279	JOE	MAZILA	YES	0	696585	8218178	5.5	11	5	9	Sianyulu	1	2	0	0	medium	2.18	0
280	ELITA	SHABONDO	NO	0	696453	8216310	1.025	0	0	4	Sitinkwe	0	0	0	1	small	0.7	0
281	DONALD	SIAMUDENDA	NO	0			3	0	0	9	Simanyangu	1	2	0	0	small	0.75	0
282	FENISON	SIAMABWELE	YES	0	696599	8218651	1.25	0	8	5	Simanyangu	1	0	1	0	small	0.7	0
283	JEMISON	NTAULU	YES	0	696675	8218621	6	12	11	5	Simanyangu	1	1	0	0	medium	2.19	0
284	BEAUTY	SIANZALA	NO	0	696084	8217689	2.25	0	0	6	Simanyangu	0	1	0	1	small	0.73	0
285	LWENESS	SIMOOLELA	NO	0			6.5	4	4	5	Mapenzi	1	0	0	1	medium	2.2	0
286	SIMON	HAKULYA	NO	0			0	0	0	8		1	1	1	0	landless	0.25	0
287	LADUSCAR	SENETE	YES	0			5	0	0	5	Tinde	1	0	0	0	medium	2.17	0
288	ROSTER	SIANTUMBU	YES	0			2.75	0	0	5	Sigundu	0	0	0	1	small	0.74	0
289	KAJAZYO	JENITE	NO	0			10	0	0	4	Simanyangu	0	0	0	1	large	4	0

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290	SIALONDE	MADSON	NO	0			15	5	13	6	Makololo	1	0	0	0	large	1.6	0
291	MIGGY	SIAZWELA	NO	0	696264	8216576	13	15	5	7	Lelemeke	1	3	0	0	large	4.62	0
292	MERRIN	SIAMAKOBE	NO	0			12	0	15	4	Muyaule	0	0	0	1	large	2.4	0
293	MAKUNDYA	ENESS	NO	0			6.4	5	60	5	Siamuyaka	0	0	0	1	medium	2.2	0
294	BELITA	MUWELE	NO	2.5			7.5	7	0	5	Sitinkwe	0	0	0	1	medium	2.23	-3.04
295	SIAMBOLA	EZEKIEL	NO	0			1	1	4	6	Milawo	1	2	1	0	small	0.7	0
296	HILDER	MAZILA	NO	0			6.8	0	0	4	ChaliChusya	0	0	0	1	medium	2.21	0
297	MAKENA	SIAMALI	NO	0			4.5	0	4	6	Mutumbi	0	1	0	1	medium	2.15	0
298	SIAYWENYA	PHILIMON	NO	0.32	696154	8216369	2.25	10	5	6	Sitinkwe	1	1	0	0	small	0.73	-0.79
299	TAWOR	KISSIONE	NO	0			10	20	15	9	Simanyangu	1	2	0	0	large	4	0
300	LAGISI	MISHELL	NO	2.5	696117	8217432	2.25	7	5	8	Siakasunka	1	0	1	0	small	0.73	-0.79
301	JAMES	POKESI	NO	0	696320	8217346	5	0	0	6	ChaliChusya	1	1	0	0	medium	2.17	0
302	LUCIA	SIANUNGU	NO	0	696639	8218627	0.25	0	0	5		0	0	0	1	very small	0.13	0
303	WILLY	SIAKALOPA	NO	0			0	3	2	5	ChaliChusya	1	0	1	0	landless	0.25	0
304	JACKSON	MAKINWELL	NO	1.45			1	3	4	8	Milawo	1	2	1	0	small	0.7	0.40
305	MERVIS	MUVOMBO	NO	0	696333	8216572	1.25	0	0	6	Milawo	0	1	1	1	small	0.7	0
306	BRUNO	MPULETE	NO	0			17.5	35	40	8		1	3	0	0	Tier 2	2.19	0.00
307	JOSTER	SIABWA	NO	0	696399	8216265	18	4	6	4	Mapenzi	1	0	0	0	Tier 2	2.25	0.00
308	KENNEDY	SIAKUSULE	NO	1	696388	8216809	10.35	6	30	6	Lelemeke	1	1	0	0	large	4.55	-1.25
309	EMELU	MAZILA	NO	0			0.75	0	0	5	Makololo	0	0	1	1	small	0.69	0
310	SIYAKUNSULE	JAZE	NO	0			2	0	0	4	Makololo	1	0	0	0	small	0.72	0
311	BABYLON	SIABUSU	YES	0	697106	8217217	3.25	0	0	8	Mutumbi	1	0	1	0	small	0.75	0
312	BENSON	SIAMUMVAMBA	NO	1.1	696808	8217176	4.25	0	0	10	Kakunka	3	2	1	0	medium	2.15	0.05
313	LEONARD	SIMWIINDE	NO	0			0.5	0	2	8	Kakunka	1	1	1	0	very small	0.14	0
314	NCHIMUNYA	SIANKUSULE	NO	0			0.05	0	0	2	Kakunka	0	0	1	1	very small	0.13	0
315	LEONARD	MUDENDA	NO	0	696589	8217158	3.525	0	0	4	Kakunka	1	0	1	0	medium	2.13	0
316	ASIA	SIABENENE	NO	0	696652	8216738	2.75	0	0	5		1	0	0	0	small	0.74	0
317	KACHOLA	GRACE	NO	0			1.025	0	0	4	Makololo	0	1	1	1	small	0.7	0
318	ALICE	SIMWIINDE	NO	0	696731	8217139	0.25	1	0	5	Mutumbi	0	2	1	1	very small	0.13	0
319	PEARSON	SITINKWE	NO	0	696548	8216226	2	0	0	8	Milawo	1	1	1	0	small	0.72	0
320	LOINA	MPULETE	NO	0			3.5	0	9	5		0	0	0	1	medium	2.13	0
321	AUTINE	GOLO	NO	0	696372	8216991	2.75	0	0	5		1	0	0	0	small	0.74	0
322	LISTER	NYONANI	NO	0			0.25	0	0	5	Siyakasunka	0	1	1	1	very small	0.13	0
323	BIZYWELL	KANDELA	NO	0	696822	8217399	5	11	0	6	Chikondo	1	0	1	0	medium	1.6	0
324	MUCHIMBA	IREN	YES	0	696567	8218354	2.25	0	3	5	Tinde	0	0	0	1	small	0.73	0
325	CHIMAIMA	MAGGIE	NO	0			0.025	0	0	4	Simunza	0	1	1	1	very small	0.13	0

Household number	Name 1	Name 2	For re-location	Fields in Tiers	Household location X	Household location Y	Farm area, ha	Cattle	Goats	Family members	Sub-village of residence	Number of spouses	Number of youth	Food insecure households	Female headed households	FARMSIZE category	Tier 1 allocations (number) 1=0.25 ha, Tier 2 in ha	Difference future allocation equivalent in rainfed minus initial farm size in ha
326	STENDER	SITINKWE	NO	0	696309	8216257	4.75	0	0	5	Maunga	1	0	0	0	medium	2.16	0
327	GEOGINA	SINABULEYA	NO	0	696151	8217535	7	0	0	5	Simunza	0	0	0	1	medium	2.22	0
328	SINABULEYA	DOUGLAS	NO	0	696084	8217587	11	0	18	7	Simunza	1	0	0	0	large	4.57	0
329	MUCHIMBA	ELIOTE	NO	0			11	3	25	6	Simunza	1	1	0	0	large	4.57	0
330	WIVA	CHAMUNKUYU	NO	0			0.625	0	0	7	Simunza	1	0	1	0	very small	0.14	0
331	BENGULA	JANE	NO	0			1.275	0	0	6	Kakunka	0	0	1	1	small	0.7	0
332	NKONDO	SIMUNDO	NO	0			6	18	19	4		1	0	0	0	medium	2.19	0
333	CHIKONO	PHINIAS	NO	0			2	16	9	6	ChaliChusya	1	0	0	0	small	0.72	0
334	ENOCK	SIGUNDU	NO	0			1.62	0	0	6	ChaliChusya	1	0	1	0	small	0.71	0
335	SIABENENE	ORBERT	NO	0			4.5	0	4	7	Simunza	1	1	0	0	medium	0.8	0
336	OBRINE	SINYULU	NO	0			0.2	0	0	5	Tinde	1	0	1	0	very small	0.13	0
337	PETER	NAMALWA	NO	9.6	696492	8217452	0.025	0	0	10	Muyaule	1	2	1	0	very small	0.13	0.24
338	SIANGOLA	RAPHEAL	NO	0	696535	8217600	6.2	1	0	9	ChaliChusya	1	2	0	0	medium	2.2	0
339	SENETE	CHRISTOPHER	NO	0			4.25	0	0	6	Tinde	1	0	0	0	medium	2.15	0
340	FAISON	SIGUNDU	NO	0	696435	8217799	2.25	0	6	9	ChaliChusya	1	1	1	0	small	0.73	0
341	JAMESON	SIMAPANDE	NO	0	696259	8217337	3.5	0	0	6	Muyaule	1	3	0	0	medium	1.6	0
342	JAPHET	SIAMUSOWE	NO	0	696214	8216394	0.34	0	0	1	Milawo	0	0	0	0	very small	0.14	0
343	JOSEPH	MUNAMPENI	NO	2.3	696635	8216279	4.75	0	0	6	Muchimba	1	1	0	0	medium	2.16	-0.43
344	ALEXANDER	MINZIYABANTU	NO	0	696644	8216510	5.25	0	0	9		1	0	0	0	medium	2.17	0
345	JAMESON	MUNGONI	NO	0	696304	8216323	2.75	0	0	10	Sitinkwe	1	2	0	0	small	0.74	0
346	TELEZA	MAKABU	NO	0	696355	8216285	2.25	0	0	2	Sitinkwe	0	0	0	1	small	0.73	0
347	GEORGINA	SIGUNGU	NO	0			2	0	0	8	Mutumbi	0	2	0	1	small	0.72	0
348	STAMBRIGE	SIAMAPANDE	NO	0	696284	8217328	3	0	0	3	Muyaule	1	0	0	0	small	0.75	0
349	ELIA	SIAMPOLA	NO	0			2	0	0	5	ChaliChusya	0	1	0	1	small	0.72	0
350	RIPHER	SIMALUNDU	NO	0	696503	8216736	2.5	0	0	4	Siambote	1	0	0	0	small	0.73	0
351	CHARLES	SIAZWENI	NO	0			1.75	0	0	2	Kakunka	1	0	0	0	small	0.72	0
352	LACKSON	SIAMAKOBE	NO	0			1.7	0	0	7	Siakasunka	1	1	1	0	small	0.71	0
353	FINESS	SIAMALUNDU	NO	0			1.62	0	0	7	ChaliChusya	0	0	1	1	small	0.71	0
354	SIBEENZU	MUNAMPENI	YES	0	696899	8217308	4.62	0	0	8	Mutumbi	1	0	1	0	medium	2.16	0
355	MARY	MABWALULA	NO	0	696402	8217544	1	0	0	1	Muyaule	0	0	0	1	small	0.7	0.15
356	NELLY	MUUTE	NO	0	696440	8217725	1.25	0	0	3	ChaliChusya	0	0	1	1	small	0.7	0
357	DOILICA	SIAMAPABI	NO	0			0.55	0	0	6	Lwanguluko	0	2	1	1	very small	0.14	0
358	SOPIA	SYAMAOBE	NO	0			1	0	0	1	Muyaule	0	0	0	1	small	0.7	0
359	SOPHIA	MAGWALO	NO	0	696357	8218609	1	0	0	5	Sianyulu	0	2	1	1	small	0.7	0
360	ELIJA	SIAMUSOWE	NO	0	696245	8216386	5.12	0	0	7	Milawo	1	1	0	0	medium	2.17	0
361	JULIA	SIANGOLOMA	NO	0			3.2	0	0	2	Milawo	0	0	0	1	small	0.75	0

Household number	Name 1	Name 2	For re-location	Fields in Tiers	Household location X	Household location Y	Farm area, ha	Cattle	Goats	Family members	Sub-village of residence	Number of spouses	Number of youth	Food insecure households	Female headed households	FARMSIZE category	Tier 1 allocations (number) 1=0.25 ha, Tier 2 in ha	Difference future allocation equivalent in rainfed minus initial farm size in ha
362	LAYEE	NKABA	NO	0			3.5	0	0	5	Siambote	0	1	0	1	medium	1.6	0
363	JOEL	SIMUNYEMU	NO	0	696257	8216943	12.25	0	0	5	Lelemeke	1	0	0	0	large	4.6	0
364	BOKELO	SIANYULU	NO	0			0.62	0	0	4	Siakasunka	1	0	1	0	very small	0.14	0
365	PAUL	MUYAULE	NO	0.84	696805	8217257	1.25	0	0	9	Kakunka	1	0	1	0	small	0.7	0
368	LIBERT	SAI	NO	0			0.5	0	0	2	Muchimba	1	0	1	0	very small	0.14	0
369	FELUNA	SAI	NO	0			0.5	0	0	4	Lelemeke	0	0	1	1	very small	0.14	0
370	DENNIS EDWARD	SIAULULA	NO	0	696774	8217040	7.12	0	0	6	Siambote	1	0	0	0	medium	2.22	0
371	EIDENCE	SIAZWELA	NO	0	696533	8216824	2.25	0	0	3	Lwanguluko	1	0	0	0	small	0.73	0
372	JIMMY	SIAMUVWABA	NO	0	696794	8217215	1.25	0	0	5	Kakunka	1	0	0	0	small	0.7	0
373	BAVEN	SIMUNZA	NO	0			2	0	0	5	Simunza	1	0	0	0	small	0.72	0
374	CHALI	SIAMUVWAMBA	NO	0			1.85	0	0	6	Simunza	0	0	0	1	small	0.72	0
375	DALKEN	SIAZILEMU	NO	0			2.25	0	0	5	Muyaule	1	0	0	0	small	0.73	0
376	LAISON	MANGWAMBA	NO	0			4.25	0	0	6	Simunza	1	0	0	0	medium	2.15	0
377	ALVIN	SIMUNYEMU	NO	0	696275	8216919	1.75	0	0	3	Lelemeke	1	0	0	0	small	0.72	0
378	ENELESS	SIAMAPANDE	NO	0			1.5	0	0	3	Siambote	0	0	0	1	small	0.71	0
379	JOSEPH	NKABA	NO	0	696583	8216752	3	0	0	7	Siambote	1	0	0	0	small	0.75	0
380	OYIN	GOOLO	NO	0			3	0	0	5	Lwanguluko	1	0	0	0	small	0.75	0
381	STENLY	SIAZWELA	NO	0	696525	8216807	2.85	0	0	3	Siambote	1	0	0	0	small	0.74	0
382	NELO	SIAMENDA	YES	0			8.5	0	0	10	Sigundu	1	2	0	0	medium	2.25	0
383	FELINA	SAI	NO	0	696401	8216601	0.25	0	9	3	Lelemeke	0	0	1	1	very small	0.13	0
384	SINGULU	EVA	YES	0			0.025	0	0	8	Tinde	0	2	1	1	very small	0.13	0
385	KELVIN	MASANI	NO	0	696706	8217021	0	0	0	3	Lwanguloko	1	0	1	0	landless	0.25	0
386	IVET	MANYIKA	NO	0			0.62	0	0	2	Sitinkwe	1	0	0	0	very small	0.14	0

APPENDIX B: COMPENSATION MATRIX

Appendix B1 Located within Tiers, Reported in Census and Valued

HHNo	Valuations number	Person number in census	Name of Asset Holder	Status in Census	Sub-village	Valuation of Assets, ZMW	X Coordinate	Y coordinate	Eligible for house, 1=yes, 0=no	Eligible for cash compensation	Cash payment for assets exceeding house value
1	Mutumbi 25	1	Leonard Nkandela	HHH	Mutumbi	70,450	697057	8217423	1	-	15,450
2	Mutumbi 14	8	ELINESS MUNYAMA	HHH	Mutumbi	4,870	697057	8217423	1	-	-
3	Mutumbi 14	10	Eunice Simwela	spouse	Mutumbi	4,870	697084	8217311	1	-	-
4	Mutumbi 11	16	Eliza Simwela	HHH	Mutumbi	8,380	697082	8217331	1	-	-
4	Mutumbi 28	18	Given Simwela	son	Mutumbi	2,100	697082	8217331	0	2,100	-
5	Mutumbi 12	29	Mynet Simwela	Daughter	Mutumbi	3,000	697094	8217330	1	-	-
5	Mutumbi 16	25	Felista Simwela	HHH	Mutumbi	6,800	697094	8217330	0	6,800	-
6	Mutumbi 9	33	Miriam Siabuzwima	HHH	Mutumbi	6,000	697040	8217207	1	-	-
9	Mutumbi 26	41	Fred Simwela	HHH	Mutumbi	3,000	697107	8217304	1	-	-
30	Sianyulu 10	143	Smith Sianyulu	HHH	Sianyulu	5,420	696634	8218239	1	-	-
52	Muchimbu 1	253	Chrispin Kashaka	HHH	Muchimbu	3,200	697043	8216614	1	-	-
53	Muchimbu 5	256	Dorothy Handima	HHH	Muchimbu	8,800	697027	8216533	1	-	-
54	Muchimbu 6	259	Suria Sikapande	HHH	Muchimbu	3,490	697060	8216425	1	-	-
55	Mutumbi 2	261	Loveness Siampula	HHH	Mutumbi	3,800	697105	8217262	1	-	-
55	Mutumbi 2	261	SIAMPOLA LOVENESS	HHH	Mutumbi	3,800	697105	8217262	0	3,800	-
71	Siambote 3	351	Leonard Kahilu	HHH	Siambote	10,490	697177	8216987	1	-	-
72	Siambote 2	361	Bridget Mutetwa	HHH	Siambote	3,190	697180	8216923	1	-	-
73	Muchimbu 10	1121	Sikapinde Elison	HHH	Muchimbu	10,020	697047	8216473	1	-	-
73	Muchimbu 10	367	ERISON SIKAPANDE	HHH	Muchimbu	10,020	697047	8216473	0	10,020	-
76	Muchimbu 8	389	Richard Kabita	HHH	Muchimbu	4,270	697013	8216408	1	-	-
95	Additional 3	515	Hilda Mazila	Daughter	Additional	1,100	696836	8216611	1	-	-
98	Sianyulu 9	540	Kelvin Sianyulu	HHH	Sianyulu	5,130	696479	8216741	1	-	-
99	Tinde 3	545	Minister Simadabwali	HHH	Tinde	7,300	696588	8218248	1	-	-
100	Additional 15	557	Kennedy Ntaulo	HHH	Additional	10,650	696660	8218659	1	-	-
102	Additional 18	572	Stanely Ntaulo	HHH	Additional	23,970	696651	8218622	1	-	-
111	Sianyulu 4	634	Christopher Simalumbo	HHH	Sianyulu	8,580	696412	8218265	1	-	-
111	Sianyulu 4	634	SAGANYA SIMALAMBO	son	SIANYULU	8,580	696412	8218265	0	8,580	-
113	Additional 21	648	Fisher Sianyulu	HHH	Additional	10,600	696525	8218590	1	-	-
116	Sianyulu 11	666	Wesley Sianyulu Mudenda	HHH	Sianyulu	15,140	696647	8218164	1	-	-
147	Additional 14	858	Boston Ntaulo	HHH	Additional	5,290	696695	8218640	1	-	-
149	Sianyulu 2	870	Regina Siakwelele	HHH	Sianyulu	7,700	696519	8218181	1	-	-
196	Additional 19	987	Kision Ntaulo	HHH	Additional	14,330	696614	8218613	1	-	-
196	Additional 20	993	Lucia Ntaulo	Daughter	Additional	3,000	696614	8218613	0	3,000	-
196	Additional 19	994	Kison Ntaulo	HHH	Additional	14,330	696612	8218633	0	14,330	-
204	Mutumbi 7	1009	Labani Siamailli	HHH	Mutumbi	13,900	697029	8217213	1	-	-
214	Sianyulu 8	1027	Martha Sianyulu	HHH	Sianyulu	5,130	696646	8218282	1	-	-
223	Sianyulu 7	1042	Sophia Siamalambo	mother	Sianyulu	22,080	696402	8218287	1	-	-
224	Additional 11	1043	Edward Mwale	HHH	Additional	8,000	696470	8218526	1	-	-
246	Additional 1	1033	Sandwell Mazila	HHH	Additional	3,600	696517	8218200	1	-	-
246	Additional 1	50	Kahilu Rabbecca	HHH	Siambote	3,600	697182	8216955	0	3,600	-
251	Additional 4	1132	Harrison Ntaulo	HHH	Additional	12,140	696516	8218741	1	-	-
252	Simanyangu 2	1140	Blackson simadabwali	HHH	Simanyangu	5,730	696556	8218316	1	-	-
273	Kakunka 3	1279	Benson Simanyeku	HHH	Kakunka	3,700	696894	8217425	1	-	-
279	Sianyulu 1	1338	Joel Mazila	HHH	Sianyulu	28,000	696585	8218178	1	-	-
283	Additional 13	1365	Jameson Ntaulo	HHH	Additional	31,820	696675	8218621	1	-	-
283	Additional 16	1367	Rodger Ntaulo	son	Additional	2,940	696675	8218621	0	2,940	-
311	Mutumbi 3	1526	Babylon Siabusu	HHH	Mutumbi	6,500	697106	8217217	1	-	-
324	Tinde 1	1601	Ireen Muchimba	HHH	Tinde	3,000	696567	8218354	1	-	-
354	Mutumbi 23	1778	Sibunzu Munampeni	HHH	Mutumbi	4,250	696899	8217308	1	-	-
354	Mutumbi 24	1785	Esther Munampeni	mother	Mutumbi	3,000	696899	8217308	0	3,000	-
384	Tinde 6	803	Eva Sigundu	HHH	Tinde	7,110	696586	8218356	1	-	-
196	Additional 19	994	Kison Ntaulo	HHH		14,330	696612	8218633	1	-	-

Appendix B2 Located within Tiers, Reported in Census but Not Yet Valued

HHNo	Valuations number	Person number in census	Name of Asset Holder	Status in Census	Sub-village	Valuation of Assets, ZMW	X Coordinate	Y coordinate	Eligible for house, 1=yes, 0=no	Eligible for cash compensation	Cash payment for assets exceeding house value
3	not yet valued	9	VINANCY SIMWELA	HHH	Mutumbi	8,899	697084	8217311	1	-	-
7	not yet valued	36	SIABUSU PEPEKALE	HHH	Mutumbi	8,899	697113	8217240	1	-	-
8	not yet valued	39	Bornface Siabusu	HHH	Mutumbi	8,899	697102	8217241	1	-	-
50	not yet valued	246	KAHILU RABECCA	HHH	Siambote	8,899	697182	8216955	1	-	-
51	not yet valued	250	MASANI ESNART	HHH	Siambote	8,899	696611	8217946	1	-	-
91	not yet valued	492	Ben Hamuluwa	HHH	Tinde	8,899	696557	8218596	1	-	-
116	not yet valued	666	WISELY MUDENDA	HHH	Sianyulu	8,899	696647	8218164	1	-	-
119	not yet valued	690	Friday Nsanganya	HHH	Sianyulu	8,899	696388	8218412	1	-	-
139	not yet valued	811	KENNETH SIANYULU	HHH	Sianyulu	8,899	696632	8218279	1	-	-
140	not yet valued	819	MASANI FANWELL	HHH	Sianyulu	8,899	696655	8218220	1	-	-
141	not yet valued	826	Dyson Nsanganya	HHH	Sianyulu	8,899	696351	8218363	1	-	-
145	not yet valued	854	Lucia Simanyangu	HHH	Simanyangu	8,899	696639	8218627	1	-	-
219	not yet valued	1033	MAZILA MAPENZI	HHH	Sianyulu	8,899	696517	8218200	1	-	-
223	not yet valued	1041	SIALUKUBA JELIN	HHH	Sianyulu	8,899	696402	8218287	1	-	-
250	not yet valued	1127	OBBY SIGUNDU	HHH	Sigundu	8,899	696611	8217946	1	-	-
258	not yet valued	1179	SIAMAILI LAWRENCE	HHH	Mutumbi	8,899	697162	8217080	1	-	-
266	not yet valued	1232	Josias Sianyulu	HHH	Sianyulu	8,899	696307	8218379	1	-	-
273	not yet valued	1279	Benson Simanyeku	HHH	Kakunka	8,899	696894	8217425	1	-	-
274	not yet valued	1288	MOSES SIAKWELELE	HHH	Mutumbi	8,899	696891	8217530	1	-	-
282	not yet valued	1360	Fenson Siamabwelele	HHH	Simanyangu	8,899	696599	8218651	1	-	-
324	not yet valued	1601	Ireen Muchimba	HHH	Tinde	8,899	696567	8218354	1	-	-
434	not yet valued	1954	Saliya Muleya	HHH		8,899	696548	8218298	1	-	-

Appendix B3 Not Reported in Census but Acknowledged by PPSC as within Tiers

HHNo	Valuations number	Person number in census	Name of Asset Holder	Status in Census	Sub-village	Valuation of Assets, ZMW	X Coordinate	Y coordinate	Eligible for house, 1=yes, 0=no	Eligible for cash compensation	Cash payment for assets exceeding house value
	Additional 23		Nodofiti Singubi	no data	Additional	35,800	696555	8218607	1	-	-
	Additional 5		Dominic Mazila	no data	Additional	12,400	696524	8218683	1	-	-
	Siambote 1		Rabbecca Kabita	no data	Siambote	3,490	697177	8216987	1	-	-
	not yet valued		ABILITI TIKILE	no data	Simanyangu	8,899	696511	8218737	1	-	-
	not yet valued		SHOP STENLY TIKILE	no data		8,899	696589	8218632	1	-	-
	not yet valued		FENI SIMAMBWELELE	no data		8,899	696599	8218651	1	-	-
	not yet valued		KENNEDY TIKILE	no data		8,899	696656	8218661	1	-	-
	not yet valued		BOSTON TIKILE	no data		8,899	696693	8218643	1	-	-
	not yet valued		Christine Siagaba	no data		8,899	696572	8218367	1	-	-
	not yet valued		Sofia Sianchinda	no data		8,899	696379	8218388	1	-	-
	not yet valued		Vungavunga	no data		8,899	696454	8218517	1	-	-
	not yet valued		Tickley Ntaulu	no data		8,899	696673	8218626	1	-	-

Appendix B4 Reported in Census and Valued but Not Located

HHNo	Valuations number	Person number in census	Name of Asset Holder	Status in Census	Sub-village	Valuation of Assets, ZMW	X Coordinate	Y coordinate	Eligible for house, 1=yes, 0=no	Eligible for cash compensation	Cash payment for assets exceeding house value
128	Chalichusia 3	734	Little Shantumbu	HHH	Chalichusia	4,390			1	-	-
182	not yet valued	955	PEDZAI MANKOMSA	HHH	Milawo	8,899			1	-	-
222	Mutumbi 5	1039	Esther Simwela	HHH	Mutumbi	7,200			1	-	-
287	Additional 7	1389	Lado Senete	HHH	Additional	5,400			1	-	-
288	Chalichusia 2	1394	Roaster Siantumbu	HHH	Chalichusia	15,080			1	-	-
382	Sigundu 6	1897	Nelo Siamenda	HHH	Sigundu	6,410			1	-	-
382	not yet valued	1899	BRIGHT SIAMENDA	son	SIGUNDU	8,899			0	8,899	-
384	Tinde 2	806	Creature Mukonka	son	Tinde	1,400			1	-	-
391	Sigundu 2		Obi Siantumbu	HHH	Sigundu	5,810			1	-	-

Appendix B5 Not located, Not on Cadastral Map, not in Census, but Valued

HHNo	Valuations number	Person number in census	Name of Asset Holder	Status in Census	Sub-village	Valuation of Assets, ZMW	X Coordinate	Y coordinate	Eligible for house, 1=yes, 0=no	Eligible for cash compensation	Cash payment for assets exceeding house value
	Additional 10		Jaya Litana	no data	Additional	7,100			0	-	-
	Additional 12		Christopher Shamunkuyu	no data	Additional	3,700			0	-	-
	Additional 17		Phenison Siamambebele	no data	Additional	6,500			0	-	-
	Additional 2		Rainford Mazila	no data	Additional	6,100			0	-	-
	Additional 6		Beauty Siapuwa	no data	Additional	3,100			0	-	-
	Additional 8		Falls Sianyulu	no data	Additional	7,400			0	-	-
	Additional 9		Dabinet Sianyulu	no data	Additional	3,300			0	-	-
	Chalichusia 10		Keith Siampola	no data	Chalichusia	2,100			0	-	-
	Chalichusia 4		Egness Siabanene	no data	Chalichusia	23,500			0	-	-
	Chalichusia 5		Joseph Shanrumbu	no data	Chalichusia	3,970			0	-	-
	Chalichusia 6		Nzubuka Siantumbu	no data	Chalichusia	3,890			0	-	-
	Chalichusia 8		Rachael Sinamba	no data	Chalichusia	4,800			0	-	-
	Kakunka 1		Molina Siamulyambwene	no data	Kakunka	5,700			0	-	-
	Kakunka 2		Margie Matekenya	no data	Kakunka	2,300			0	-	-
	Kakunka 4		Junior Siakaloba	no data	Kakunka	1,900			0	-	-
	Muchimbu 2		Pezai Mankumba	no data	Muchimbu	2,500			0	-	-
	Muchimbu 7		Brighton Sikapande	no data	Muchimbu	2,860			0	-	-
	Mutumbi 10		Bertha Simwela	no data	Mutumbi	8,750			0	-	-
	Mutumbi 10		Bertha Simwela	no data	Mutumbi	8,750			0	-	-
	Mutumbi 15		Lackson Simwela	no data	Mutumbi	6,570			0	-	-
	Mutumbi 17		Agness Simwela	no data	Mutumbi	1,900			0	-	-
	Mutumbi 18		Moses Bwana	no data	Mutumbi	5,820			0	-	-
	Mutumbi 19		Astral Shantumbu	no data	Mutumbi	1,800			0	-	-
	Mutumbi 20		John Bwana	no data	Mutumbi	530			0	-	-
	Mutumbi 21		Aaron Siakwelele	no data	Mutumbi	3,600			0	-	-
	Mutumbi 22		Biswell Nkandela	no data	Mutumbi	29,940			0	-	-
	Mutumbi 27		Blosswell Simwela	no data	Mutumbi	2,400			0	-	-
	Mutumbi 8		Malambo Siamulula	no data	Mutumbi	2,400			0	-	-
	Sianyulu 5		Stephen Siamalambo	no data	Sianyulu	1,690			0	-	-
	Sigundu 1		Manager Sigundu	no data	Sigundu	5,260			0	-	-
	Sigundu 11		Elizabeth Siamupa	no data	Sigundu	3,420			0	-	-
	Sigundu 17		Carol Chikondo	no data	Sigundu	3,700			0	-	-
	Sigundu 18		Offen Chikondo	no data	Sigundu	2,300			0	-	-
	Sigundu 20		Christabel Chikondo	no data	Sigundu	5,200			0	-	-
	Sigundu 22		Lottie Chikondo	no data	Sigundu	4,200			0	-	-
	Sigundu 4		Simunza Siankwembo	no data	Sigundu	3,330			0	-	-
	Sigundu 9		Chavu Sigundu	no data	Sigundu	4,760			0	-	-
	Simanyangu 1		Saliya Muleya	no data	Simanyangu	6,780			0	-	-
	Tinde 4		Beauty Ntaulo	no data	Tinde	5,900			0	-	-
	Tinde 5		Mailedi Tobola	no data	Tinde	4,310			0	-	-
	not yet valued		MIRRIAM SIANKWEMBO	no data	SIGUNDU	8,899			0	-	-
	not yet valued		BEN SIANTOBOLO	no data		8,899			0	-	-

Appendix B6 Affected Farmers Shown on Cadastral Map

Name	Total holding, ha	Total holding of Affected farmer, ha	Affected holding of Affected farmers, ha	% of Total Affected
Belita Muwele	2.92	2.92	2.51	86%
Jimmy Siamulafu	3.12	3.12	1.44	46%
Not named	3.84	3.84	10.72	279%
Not named	18.26	18.26	10.72	59%
Not named	16.31	16.31	10.72	66%
Not named	1.74	1.74	10.72	615%
Not named	4.08	4.08	10.72	263%
Not named	8.93	8.93	10.72	120%
Simon M.Mkaba	23.79	23.79	18.44	78%
Micheal Langisi	3.23	3.23	2.58	80%
Gloria Sayi	3.68	3.68	0.63	17%
Maffat Sayi	13.69	13.69	1.06	8%
Benson Siamvuwanda	2.01		0.00	
Moses Siamuvwamba	4.59	4.59	4.59	100%
Solomon Kanjela	2.27	2.27	1.34	59%
Fine Milambo	2.16	2.16	0.28	13%
Manuell Milambo	1.53		0.00	
Soviet Milambo	1.68		0.00	
Maureen Siachitema	18.72	18.72	9.64	51%
Sebion Buyala	1.37		0.00	
John Buyala	1.14		0.00	
Not named	3.00	3.00	10.72	358%
Sunday Buyala	0.77		0.00	
Mackson Mungunje	1.04		0.00	
Courtrick Nkaba	1.84		0.00	
Jane Kukule	2.35		0.00	
Roda Sigudu	5.37		0.00	
Thunders Nkaba	0.89		0.00	
Mary Simalambo	2.62		0.00	
Gndwell Nkaba	1.36		0.00	
Joseph Nkaba	2.43		0.00	
James Mulungu	7.77	7.77	1.12	14%
Bruno Milambo	1.16		0.00	
Racheal Simamba	0.68	0.68	0.68	100%
Eunice Samaili	0.81	0.81	0.81	100%
Lawrence Simaili	1.19	1.19	1.19	100%
Gilder Siacheka	2.40	2.40	2.40	100%
Leonard Nkandela	2.56	2.56	2.56	100%
Venus Simwela	2.38	2.38	2.38	100%
Paul Muyaule	0.85	0.85	0.85	100%
Benson Siamuvwamba	1.15	1.15	1.15	100%
Robson Siamakobe	0.86	0.86	0.86	100%
Morrison Sibukoko	1.21	1.21	2.03	168%
Simon Nkaba	4.07	4.07	4.07	100%
Morrison Sibukoko	2.03	2.03	2.03	100%

Name	Total holding, ha	Total holding of Affected farmer, ha	Affected holding of Affected farmers, ha	% of Total Affected
Edward Siauluka	3.22	3.22	0.53	17%
Jonathan Sayi	3.34	3.34	3.34	100%
Anoro Siakande	1.93	1.93	1.93	100%
Benny Siubula	1.29	1.29	1.29	100%
Langson Mulungu	4.16	4.16	4.16	100%
Gibson Siankusule	2.70	2.70	2.70	100%
Maria Namahuwo	1.26	1.26	1.26	100%
Edward Siauluka	0.53	0.53	0.53	100%
Kennedy Siakusule	1.05	1.05	1.05	100%
Grace Siazwela	0.61	0.61	0.61	100%
Poisa Siazwela	0.50	0.50	0.50	100%
Gloria Sayi	0.63	0.63	0.63	100%
Elija Siamusowe	4.97	4.97	4.97	100%
Victor Chamungwa	0.84	0.84	0.84	100%
Dickson	3.24	3.24	2.85	88%
Mangalita Sitinkwi	1.19	1.19	1.19	100%
Samson Nyowana	6.19	6.19	6.19	100%
Sara Wanki	1.54	1.54	1.54	100%
Janny	1.43	1.43	1.43	100%
Rabbecca Siaulula	1.22	1.22	1.22	100%
Peter Siabuwa	1.32	1.32	1.32	100%
Kelesiya Sitinkwi	0.77	0.77	0.77	100%
Lalla Sitinkwi	2.37	2.37	2.37	100%
Philemon Siavwenya	0.52		0.00	
Charles Siabuwa	0.96	0.96	0.96	100%
Lazarous Siankusule	2.81	2.81	1.99	71%
Elina Nyowana	1.61	1.61	1.58	98%
Esnart Nyowana	2.11	2.11	2.09	99%
Sikina Nyowana	2.14	2.14	2.14	100%
Joseph Munampeni	2.29	2.29	2.29	100%
Mwiinga Simalambo	3.01	3.01	1.77	59%
Benny S. Chaselwa	3.32	3.32	2.49	75%
Pearson Sitinkwi	2.17	2.17	2.17	100%
Elison Sikapande	1.69	1.69	1.64	97%
Kingwell Sitinkwi	1.45	1.45	1.45	100%
Mogina Magau	0.93	0.93	0.93	100%
Charity Magau	0.91	0.91	0.91	100%
Sofia Sitinkwi	1.04	1.04	0.85	82%
Tyson Moulete	0.54	0.54	0.26	48%
Jelina Sialukuba	0.37	0.37	0.37	100%
Micho Siabuwa	1.45	1.45	1.45	100%
Maria Sichikoli	0.81	0.81	0.81	100%
Son	5.55		0.00	
Simon Chamunkulu	13.94		0.00	
Simon Hakulya	5.94		0.00	
Malata Sachinene	1.84		0.00	
Total	293.56	238.19	209.06	88%

APPENDIX C: MINUTES OF THE PUBLIC DISCLOSURE MEETING

Following announcements in the *Zambian Press* and extensive preparation, the RAP for Lusitu was presented by the Team Leader CP&CB Provider and the Resettlement Specialist CP&CB Provider at a RAP Public Disclosure Meeting held at Sitinkwe village, Lusitu on 9th May 2014. About 154 people attended the presentation including MAL-IDSP, World Bank, the four IDSP consulting teams (Z-A Engineering responsible for irrigation design, CEPA responsible for financial planning, ISFA responsible for the operation of the Irrigation Support Fund and SOFRECO responsible for community participation and capacity building), local MAL officers, the Chief's Representative, District Council and local people. The presentation format was as follows.

- Overview:
 - A RAP is a legal requirement to identify costs and resettlement requirements and ensure that persons eligible for compensation are at least no worse off than before,
 - The composition of the RAP team was CSO, MAL's Land Husbandry Department and MHLG Valuations Department supported by CP&CB Provider,
 - Public Disclosure of the RAP is a legal requirement;

The principles governing re-settlement and compensation at the Lusitu IDSP site were stated to be:

- Households living inside areas designated as future irrigation blocks:
 - will be moved to a location as close as possible outside the block and be compensated with a house constructed by IDSP,
- Households farming inside areas designated as irrigation blocks :
 - will be allocated a similar area outside the block (if available),
- All households in the Lusitu community identified in the RAP will be project beneficiaries and:
 - will receive an accessible irrigation allocation and support to begin irrigated farming operations,

The consultation process:

- The cut-off date of the RAP is 5th July 2013;
- Outline resettlement plans were discussed with the community during 2013 and the results of RAP fieldwork was presented in February 2014 for agreement and validation of the data:
 - The results of the Cadastral survey as reported in this RAP document were described,
 - The results of the Census as reported in this RAP document were described,
 - The results of Asset inventory and valuation as reported in this RAP document were described,
 - The characteristics of Vulnerable groups as reported in this RAP document were described,
 - Theoretical and community solutions to allocations of irrigated land as reported in this RAP document were described,
 - Project impacts as reported in this RAP document were described,
 - Entitlements defining the framework of the compensation process as reported in this RAP document,
 - Legal framework and implementation arrangements were described including the formation and tasks of the Compensation and Grievance Committee as reported in this RAP document,
 - The implementation budget as reported in this RAP document was shown,
 - A list of persons resident in the Tiers was disclosed, together with the value of their fixed assets,
 - The participants were then asked to acknowledge their involvement in the RAP preparation as well as their knowledge about the movement involved. They demonstrated ownership and understanding of the RAP having participated in the RAP surveys (Census, Cadastral survey, and Valuation survey) and being informed about the RAP content. Household current location in the future irrigation blocks were for example known as well as the compensation modalities.

Questions and comments by the public attending the meeting on the proposed RAP are summarized as follows:

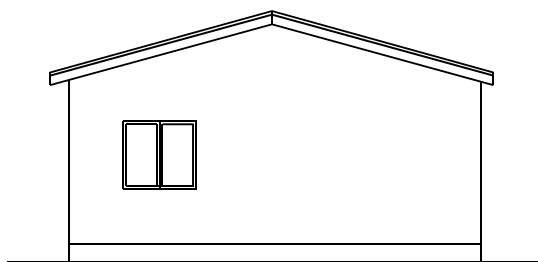
- Do we know if the rain fed land the farmers in the tiers will receive ("land for land") is available and sufficient in quantity? :
 - CP&CB Team Leader: Out of about 4,000 ha available in the village area only about 1,000 ha is cultivated and only about 100 ha of cultivation will be moved from the Tier areas, so with the help of the Chief's administration we believe that sufficient land is available,
 - Chief's Representative: Need to know how many people are concerned,
 - CP&CB Team Leader: About 54 farmers are currently allocated land within the areas designated to irrigation.
- There is a problem in the boundaries of Tier 3: a farmer complained because Tier 3 included part of his fields:
 - Chairman PPSC: Explained that the boundaries of Tier 3 had now been established to the satisfaction of the PPSC and all affected farmers had been informed of the boundaries. Not all land users were present during the

Cadastral Survey so the information could not be fully publicized until recently. Those affected within Tier 3 would be compensated by “land for land”.

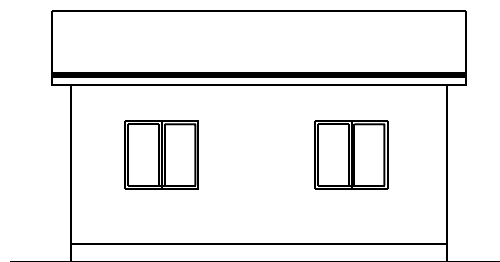
- Will farmers receiving “land for land” receive a disturbance allowance or not?
 - CP&CB Team Leader: No because they are not disturbed like people who will have to move. However people have enhanced the land over time and where possible land should be provided of similar quality,
 - CP&CB RAP Specialist: new rain fed land will be cleared at IDSP expense and all the crops affected by the construction of the tiers will be compensated for.
- What will be the status of the land where they will be resettled?
 - CP&CB Team Leader: land provided to replace land farmed in irrigation blocks will remain under customary control,
 - CP&CB RAP Specialist: Entitlement documents will be given to the house structure and plot to those who have to be resettled.

The Public Disclosure was concluded with no reported disagreements to the RAP proposed.

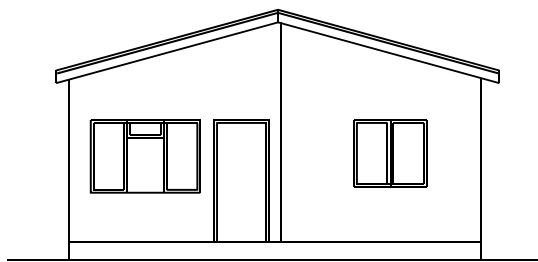
APPENDIX D: LOW COST HOUSE DESIGN



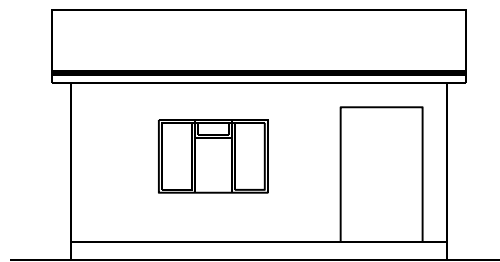
FRONT ELEVATION



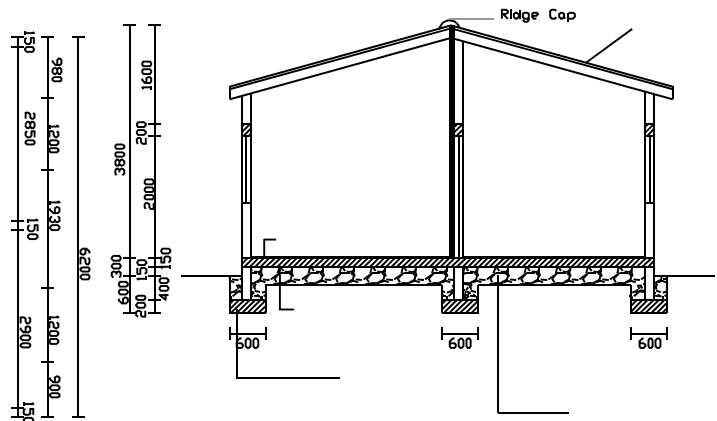
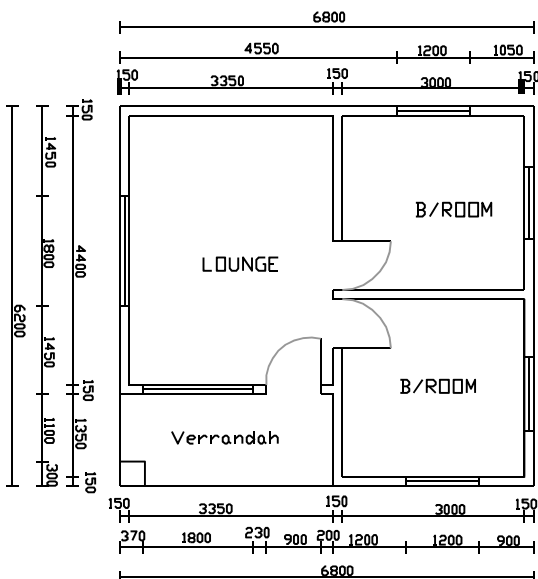
RIGHT SIDE ELEVATION



BACK ELEVATION



LEFT SIDE ELEVATION



PROPOSED QUARTERS FOR IDSP

APPENDIX E: SIGNED LIST OF AFFECTED PERSONS AND SCOPING MEETINGS

Signatures of Affected Household Heads at the Lusitu Site appear on the questionnaires for the RAP Census. They may be inspected at the office of CP&CB Provider, IDSP, 121 Mwambula Road, Jesmondine, 10101 Lusaka.

Reports on Scoping Meetings are available.

List of affected people - Lusitu

IDSP number	Name	Home address	Sex	Age	Plot number	Home address
12	Kelvin	Sayntumba	M	27	124790/78/1	Chalichusya
68	Belitah	Sibundu	F	36	214885/75/1	Chalichusya
103	danny	Sigundu	M	39	214749/75/1	Chalichusya
122	Abel	Siampola	M	57	139539/75/1	Chalichusya
142	Kenford	Mazila	M	23	140048/78/1	Chalichusya
209	Daiza	Siamaganta	f	63	141676/75/1	Chalichusya
254	Johns	Gomonde	m	29		Chalichusya
301	James	Bogesi	m			Chalichusya
338	Raphael	Siangoloma	m	40	187031/75/1	Chalichusya
340	Paison	Sigundu	m	42	193867/75/1	Chalichusya
356	Nelly	Muute	f	73	118577/75/1	Chalichusya
136	Alfred	Chikondo	M	59	125694/75/1	Chikondo
104	Athens	sibanene	M	31	100508/78/1	Kakunka
123	gildah	siancheka	F	50	159291/75/1	Kakunka
146	Hitra/Choompo	Siabanene	M	29	987237/11/1	Kakunka
152	Andason	siamakobe	M	64	137270/75/1	Kakunka
273	Benson	Simanyeku	m	39	311744/74/1	Kakunka
312	Benson	Siyamuvwamba	m	60	139729/75/1	Kakunka
315	Leonard	Mudenda	m	30		Kakunka
365	Paul	Muyaule	m	59	139528/75/1	Kakunka
372	Jimmy	Siamuvwamba	M	27	127946/78/1	Kakunka
42	Shanga Kunde	Kunde	M	20	128131/70/1	Lilemeke
45	Kismore	Sai	M	22	140187/78/1	Lilemeke
46	Gloria	Sai	F	42	159076/75/1	Lilemeke
158	Jonathan	Sai	M	82	174304/74/1	Lilemeke
165	Miggie	siazwela	M	45	249587/74/1	Lilemeke
170	Arnold	Sakabond	M	45	161467/75/1	Lilemeke
184	Wesy	Kilayi	M	30	204976/78/1	Lilemeke
190	Regents	Simunyemu	M	30	215818/75/1	Lilemeke
308	Kennedy	Siakusule	m	47	179046/75/1	Lilemeke
363	Joel Helly	Simunyemu	m	53	158969/75/1	Lilemeke
377	Alvin	Simunyema	m	29	374836/74/1	Lilemeke
41	List	Sialulenga	M	30	104469/70/1	Lwanguloko
168	Ashwell	Masani	M	27	161466/75/1	Lwanguloko
385	Kelvin	Masani	M	27	140041/78/1	Lwanguloko
48	Sophie	Siyalulenga	F	44	166519/75/1	Lwanguloko
238	Lineni	Sai	m	26	124752/78/1	Lwanguloko
321	Autine	Golo	m	28		Lwanguloko
371	Evidence	Siazwela	m	23	140126/78/1	Lwanguloko
60	Ernest	Kachacha	M	33	101889/75/1	Makololo
92	Nkwazi	Chamukuyu	M	25		Makololo
112	Edgar	Chikleke	M	41	224878/75/1	Makololo
154	Annah	siamali	F	47	179090/75/1	makololo

Benson Siyamuvwamba Kakunka Kakunka B&S
 MOFFA - SA Headman Muchumbi Village M. Sew
 STANDFORD Siampola Chalichusya Village Siyantumba
 Joel Helly's Headman Lilemeke Village J. H S
 STANDFORD Siampola Makololo J - S
 DICKSON Sitwaku Village MAUNGA
 SIMON Nkaba Village Lwanguloko

183	Webby	sianyulu	M	32	204872/75/1	Makololo
307	Voster	siabbuwa	m	28	380995/74/1	Mampenzi
39	Mimoh	Siabbuwa	M	27	124836/78/1	Mapenzi
25	Elias	Muwele	M	27	124642/78/1	Maunga
27	Charles	Siabbuwa	M	45	176059/75/1	Maunga
27	Charles	Sibbuwa	M	45	176059/75/1	Maunga
28	Dickson	Sitinkwi	M	52	161627/75/1	Maunga
326	Stender	Sitinkwi	m	30	125476/78/1	Maunga
87	Dominic	Sainea	M	40	216456/74/1	Milawo
33	Peter	Siabbuwa	M	48	175771/75/1	Milawo
35	Monday	Sai	M	28	945237/71/1	Milawo
67	Ackim	saina	M	33	443266/75/1	Milawo
135	Elijah	Siamusowe	m	62	138438/74/1	Milawo
174	Zichelele	Sigundu	F	68	118495/75/1	Milawo
180	Edson	Sinabuleya	M	40	275943/74/1	Milawo
185	Martin	Stinkwi	M	40	104494/78/1	Milawo
193	Pearson	Sitinkwe	M	43	192905/75/1	Milawo
305	Mervis	Muvombo	f	36	101364/78/1	Milawo
342	Japhet	Siamusowe	m	25	140701/78/1	Milawo
52	Kapoba	Kasheka	M	59	161658/82/1	Muchimbu
53	Handima	Dorothy	F	55	17197274/1	Muchimbu
54	mbombo	saria	F	0	114029/70/1	Muchimbu
24	Mwinga	Malambo	M	76	109369/74/1	Muchimbu
56	Mulungu	Francis	M	26	247001/75/1	Muchimbu
57	Mulungu	Maxwell	M	19	144355/78/1	Muchimbu
58	Mulungu	Elina	F	67	118648/75/11	Muchimbu
69	Dafeni	Mulungu	M	16	144371/78/1	Muchimbu
73	Erison	Sikapande	M	42	205124/74/1	Muchimbu
74	Richard	Magau	M	46	164711/75/1	Muchimbu
75	Mpundu	Mwike	M	40	627776/11/1	Muchimbu
76	Richard	Kabita	M		471111/11/1	Muchimbu
162	Sara	Nkandela	F	69	141675/75/1	Muchimbu
260	Moffat	siakabo	m	49	160867/75/1	Muchimbu
343	Joseph	Munampeni	m	56	127474/75/1	Muchimbu
61	Rodrick	Siamabobe	M	45	182501/75/1	Mugaule
62	Tryford	Kapalo	M	35	567088/71/1	Mugaule
44	John	Saina	M	43	187069/75/1	Milawo
86	Clement	Kandela	M	45		Mutumbi
129	Rabbecca	siaulula	F	73	118931/75/1	mutumbi
204	Labhani	Siamaila	M	24	140165/78/1	Mutumbi
227	Miki	Kandela	m	25		Mutumbi
242	Nkandela	Solomon	m	45		Mutumbi
258	Lawrence	Siamalili	m	36	359462/67/1	Mutumbi
259	Victor	Chinungwa	m	32	101870/78/1	Mutumbi
269	fatson	Nkandela	m			Mutumbi
274	Moses	Siakwelele	m	47	160617/76/1	Mutumbi
311	Babylon	Siabusu	m	52	175715/75/1	Mutumbi

ACKIM SAINA HEADMAN MILAWO AS

JEPHASON JANI Headman Mapenzi JANI

WISEMAN MULENTA SITE FACILITATOR (SAF) (M) [Signature]
SIMON. CHAMUKWU P.P.S.C. CHAIR PERSON [Signature]

318	Alice	Simwiinde	f	34	175918/75/1	Mutumbi
323	Blizywell	Kandela	m	29	105516/78/1	Mutumbi
354	Sibenzu	Munamperi	m	37	209182/75/1	mutumbi
1	Leonard	Nkandela	M	46	123721/75/1	Mutumbi
2	Eliness	Munyama	F	49	471068/75/1	Mutumbi
3	Venus	Simwela	M		175714/75/1	Mutumbi
4	Eliza	Kukule	F	42		Mutumbi
5	Felistas	Simwela	F	38	215849/75/1	Mutumbi
6	Maria	Mujimba	F	66	141654/75/1	Mutumbi
7	Pepekale	Siaubusu	M	18	N/A	Mutumbi
8	Bornface	Siaubusu	M	25	140014/78/1	Mutumbi
9	Fred	Simwela	M	45	140213/78/1	Mutumbi
47	Anold	Nkandela	M	33	333419/74/1	Mutumbi
55	Siapompola	Loveness	F	32	101895/78/1	Mutumbi
114	Loveness	Muvombo	F	32	187091/75/1	Muyaule
120	Mary	Muvumbo	F	33		Muyaule
150	Wilson	Muvombo	M	72	128661/74/1	Muyaule
153	Janny	siambunda	F	56	127096/75/1	Muyaule
197	Eneless	Bokesy	F	58	205868/75/1	Muyaule
267	Robson	Siamakobe	m		154947/75/1	Muyaule
337	Peter	Namalwa	m		175721/75/1	Muyaule
341	Jameson .m	Simapande	m	59	139736/75/1	muyaule
348	Stambridge	Simapande	m	25	140009/78/1	muyaule
70	Lawrance	Siamaili	M	34	359462/67/1	Shambote
71	Kabita	Kahilu	M	54	169848/84/1	Shambote
72	Bridget	Mweetwa	F	43	209842/75/1	Shambote
229	Mukonka	Denmark	M		140007/78/1	Siakasonka
187	Edith	Nkanka	F	37		0 Siakasuga
300	Misheal	Langisi	m	32	205404/75/1	Siakasunga
31	Patson	Mukonka	M	46	175548/78/1	Siakasunka
277	Beauty	Chamunkuyu	f	52	124540/75/1	sialondwe
275	Gilbert	Siamvula	m	42	186154/75/1	Siamanyangu
10	Langison	Mulenga	M	52	166520/75/1	Siambote
14	Edward	Siazwela	M	68	174230/74/1	Siambote
15	Simalundu	Moonga	M	55	150980/75/1	Siambote
50	Kahilu	Rabbecc	F	25	127926/78/1	Siambote
77	Nomai	Mulungu	F	77	118627/75/1	Siambote
84	Joffery	Simalundu	M		140283/75/1	Siambote
176	Jessy	Nkaba	F	58	118594/75/1	Siambote
177	Cridience	Sialulenga	M	29	104472/78/1	Siambote
350	Kipher	Simalundu	m	25	140348/78/1	Siambote
370	Denes	Siaulula	m	38	232303/74/1	Siambote
379	Joseph	Nkaba	m	48	205295/75/1	Siambote
381	Stenly	Siazwela	M	30	104474/78/1	Siambote
98	Kelvin	Sianyulu	M	25	138610/78/1	Sianyulu
107	Mike	Mazila	M	27	380670/74/1	Sianyulu
111	Christopher	Simalambo	M	43	234028/74/1	Sianyulu

Jacob Bayi
VENUS Simwela
Nikard BOKESI
Wilson Muvombo

Siambote Village 3 Bayi
MUTUMBI Village V.9
SIAMKUNGA Village V.V.B
MUYAULE Village Muvombo

116	Wisely	Mudenda	M	43	125184/75/1	Sianyulu
119	Friday	Nsanganya	M	35	209832/75/1	Sianyulu
140	Phanwell	Masani	M	44	275966/74/1	Sianyulu
141	Dyson	Nsanganya	M	32	124971/78/1	Sianyulu
149	Reginah	Siakwelele	F	57	127900/75/1	Sianyulu
198	Josam	Sianyulu	M	35	205868/75/1	Sianyulu
212	Dorica	Chinkono	f	63	1417141/75/1	Sianyulu
214	Martha	Sianyulu	f	74	116736/75/1	Sianyulu
219	bungameenda	Mapenzi	f	21	127265/79/1	Sianyulu
223	Sialukuba	Jelina	f	64	141590/75/1	Sianyulu
266	Josias	Sianyulu	m	43		Sianyulu
279	Joe	Mazila	m	38	204828/75/1	Sianyulu
359	Sophia	Magwalo	f		172637/75/1	Sianyulu
247	Confidence	Langise	m	19		Siasunga
148	Willard	Bbokesi	M	26	124989/78/1	Sigankasunka
63	Abel	Sigundu	M	38	214896/75/1	Sigundu
83	Desmond	Sigundu	M	35	140531/78/1	Sigundu
88	Chrisy	Sigundu	M	28	124885/78/1	Sigundu
93	Carlos	Chikoondo	M	23	169954/18/1	Sigundu
94	Costain	Syanzyambula	M	31	781997/11/1	Sigundu
117	Dafeni	Simuunza	M	31		Sigundu
118	Kanshety	Sigundu	M	41	183181/75/1	Sigundu
125	Advent	Mutale	M	23	140031/78/1	Sigundu
131	fisty	siampola	M	24		Sigundu
215	Sigundu	Jelita	f	71	118822/75/1	Sigundu
228	Simunza	Lyford	m	19	140852/78/1	Sigundu
235	Boyd	Sigundu	m			Sigundu
249	Mulungu	Langson	m	42		Sigundu
250	Obby	Sigundu	m	25	124863/78/1	Sigundu
271	Geofrey	Sigundu	m	36	209821/75/1	Sigundu
196	kison	Ntaulo	M	44	188707/42/1	Simangangu
99	Minister	Simadabwali	M	36	101507/78/1	Simanyangu
100	Kenndy	Ntaulo	M	36	208945/78/1	Simanyangu
102	Stanley	Ntaulo	M	31	104497/78/1	Simanyangu
121	Dickson	Tendeka	M	57	201509/74/1	Simanyangu
130	Winnie	Chamukuyu	F	39	206178/75/1	Simanyangu
145	Lucia	Simanyangu	F	75	116658/75/1	Simanyangu
147	Boston	Ntaulo	M	26	138487/78/1	Simanyangu
224	Edward	Mwale	m	74	118897/75/1	Simanyangu
226	Chamukuyu	Christopher	m	29		Simanyangu
230	Winnie	Chamikuvu	f	40		Simanyangu
239	Simon	Chamukunyu	m	63	180556/67/1	Simanyangu
251	Harrison	Natualu	m	39	104496/78/1	Simanyangu
264	Joseph	Siamalichaula	m	29		Simanyangu
265	Litana	Sianzala	f	44		Simanyangu
282	Fenson	Siamabwelele	m	31	125442/78/1	Simanyangu
283	Jameson	Ntaulu	m	55	123898/75/1	Simanyangu

Segungu client headland Fundi Sigundu
SIMON CHAMUKUYU SIMANYANGU

284	Beauty	Sianzala	f	53		Simanyangu
49	Elizabeth	Siankwembo	F	40	159632/75/1	Simunza
108	Bitwell	Siankwembo	M	49	178935/75/1	Simunza
207	Godfrey	Siankwembo	m	48	178936/75/1	Simunza
208	Elina	Chinyama	m	69	141532/75/1	Simunza
210	Coomas	Siakwendo	m	48	178934/75/1	Simunza
236	Dorothy	Sinabuleya	f	52	231871/74/1	Simunza
237	Harold	Siamukwembo	m	27	124943/75/1	Simunza
240	Chinyama	Malita	f	50	159289/75/1	Simunza
244	Dylon	muvombo	m	64	117093/75/1	Simunza
255	Ever	Siamunkuyu	m	32		Simunza
261	Crackson	Siankwembo	m	45	212781/75/1	Simunza
272	Cosweli	Muuombo	m	31	101833/78/1	Simunza
327	Geogina	Sinabuleya	f	37	104481/78/1	Simunza
328	Dauglas	Sinabuleya	m	33	101951/78/1	Simunza
109	Friday	Magwalo	M	31	124810/75/1	Simunza
16	samson	Singubi	M	66	128013/75/1	sitinkwi
19	Kefas	Muzyama	M	43	108542/78/1	sitinkwi
20	Brian	Siywenya	M		140661/78/1	sitinkwi
64	Lazarus	Siankusule	M	60	107724/74/1	sitinkwi
65	Gibson	Siankusule	M	50	154902/75/1	Sitinkwi
79	Laila	Sitinkwi	F	48	178863/75/1	sitinkwi
80	Malita	Siamwiinde	F	57	318530/11/1	sitinkwi
81	Jefason	Jani	M	55	123729/75/1	sitinkwi
82	Thomas	Saina	M		125899/78/1	sitinkwi
106	Strange	mubemba	M	24	400222/78/1	sitinkwi
132	kepson	Manyika	M	43	177874/75/1	sitinkwi
163	Noria	Saina	F		154951/75/1	Sitinkwi
201	Sarah	Jani	F	76	1415681/75/1	Sitinkwi
217	Magalita	Sitinkwi	f	77	141896/75/1	sitinkwi
234	A	Siakanyankondo	m	32	140186/78/1	Sitinkwi
263	Adijai	Mwele	m	36	215823/75/1	Sitinkwi
280	Elita	Shabondo	f	55	124431/75/1	Sitinkwi
298	Philimon	Siywenya	m	80	105050/74/1	Sitinkwi
345	Jameson	mungoni	m	59	141673/75/1	sitinkwi
346	Teleza	Mukabu	f	78	118903/75/1	sitinkwi
30	Smith	Siaundu	M	48	187056/75/1	Syangulu
91	Ben	Hamuluwa	M	43	187810/75/1	Tinde
97	Millias	Sianyulu	M	44	175455/75/1	Tinde
113	Fisher	Sianyulu	M	49	166142/75/1	Tinde
252	Blackson	Simadabwali	m	26	125528/78/1	Tinde
324	Ireen	Muchimba	f	34	101467/78/1	Tinde
21	Jacob	Sayi	M	57	140284/75/1	
144	Simon	Nkaba	M	55	325530/11/1	
213	Saliya	Sianyulu	f	78	116737/75/1	
316	Asia	Siabanene	m	33	102450/78/1	
344	Alexander	minziyabantu	m	40	215824/75/1	






Dare si Muvombo Simunza
Hamuluwa Ben Tinde v.
LAZARUS SIANKUSULE Sitinkwi Headman

D. Mubemba
[Signature]
Siankusule

ANNEX F; OVERLAPS AND GAPS BETWEEN THE ZAMBIAN LEGISLATION AND WORLD BANK PO 4.12







Overlaps

There are many similarities between Zambian law and the World Bank's OP 4.12. The overlaps include:-

-  the requirement to pay compensation in advance where land is compulsorily acquired
-  compensation based on full market value or through grant of another plot of land or building of equal quality, size and value, [to quote relevant Act
-  avoidance wherever possible impacts on forest reserves, national parks and other fragile ecosystems,
-  the requirement to compensate for losses whether temporary or permanent in production or damage to productive assets and crops; and
-  provision for the rights of appeal and other judicial avenues for resolution of disputes.

Gaps

The following gaps exist between the World Bank Op 4.12 provisions and Zambian legislation:

-  Comprehensive resettlement planning. There is no requirement under the Zambian law for the preparation of a comprehensive formal resettlement action plan (RAP) including carrying out a census, social economic survey, consultations with project affected people, monitoring, reporting, etc. The Town and Country Planning legislation which deals with issues of human settlement and development in Zambia does not refer to involuntary settlement but only to the removal of squatters on state lands needed for urban expansion and development.
-  Compensation eligibility in Zambia. Under the Zambian law, only people and entities with title deeds are entitled to compensation e.g. those with registered third party rights or those who have legally obtained the right to register but have not yet completed registration.
-  Under World Bank's OP 4.12, illegal land users without title to the land are entitled to compensation. In some cases of illegal development, compensation is provided on discretionary basis on case by case basis.
-  Compensation and resettlement assistance. The current Zambian law provides for the payment of compensation at market value for losses of land, buildings, crops and other damages arising from the acquisition of land for project activities. Under the Zambian law, moving costs or rehabilitation support to restore previous level of livelihood or living standard are not recognized, and there is no government agency charged with that responsibility.
-  Property measurement. Under the Zambian law, compensation is equal to the market value of the property without reference to depreciation. On the contrary, under the World Bank Safeguard policies, compensation for lost properties will be calculated on the basis of full replacement cost i.e. equal to what enables the project affected people (PAP) to restore their livelihoods at the level prior to resettlement.
-  Income restoration. The current Zambian law does not recognize compensation for lost income contrary to the World Bank's OP 4.12 provision which requires that lost income due to project activity should be compensated.

INTRODUCTION

Section 4 presents the maps produced as part of the Resettlement Action Plan. The maps were prepared using different data sources:

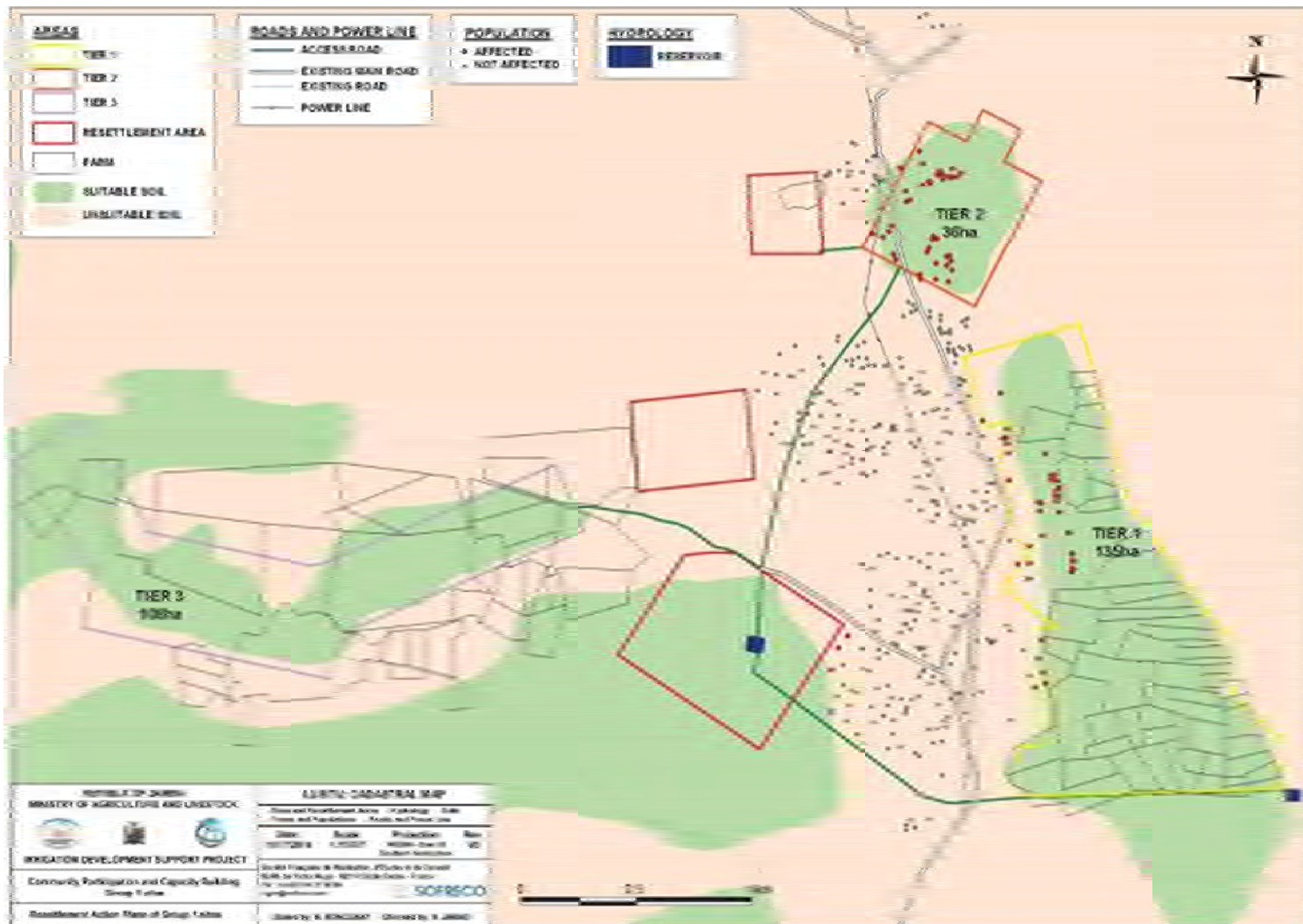
- Soils: Soil Survey of the Proposed Lusitu Site, IDSP, Hungwe 2012;
- Engineering and design: Detailed Design of Group 1 Sites: Draft Detailed Study of the Lusitu Sites Z&A P. Antonaropoulos & Associates;
- Cadastral Data: MAL Land Husbandry field surveys June-July 2013;
- Socio-economic Data: CP&CB/CSO field surveys, June-July 2013;
- GPS locations: Sofreco Site Facilitators.

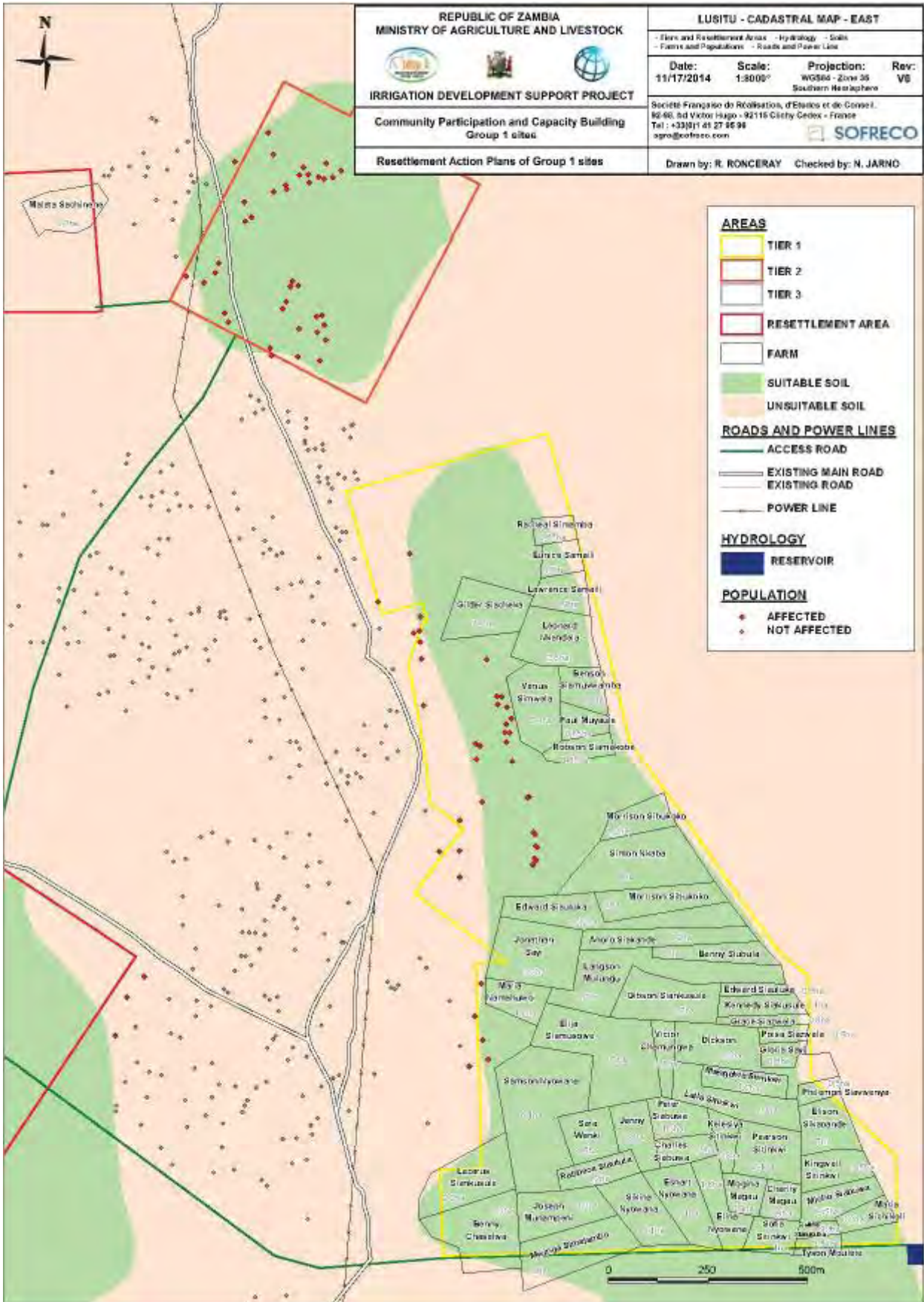
The maps were prepared by the Sofreco GIS Specialist on the basis of maps and measurements carried out by MAL Land Husbandry.

MAPS 1: CADASTRAL MAPS

The Cadastral maps present the current farm boundaries, the proposed design of the irrigation scheme and the infrastructure linked with the development of the area (roads, pipe-lines, pumps), the three proposed resettlement areas and the locations of the present settlements.

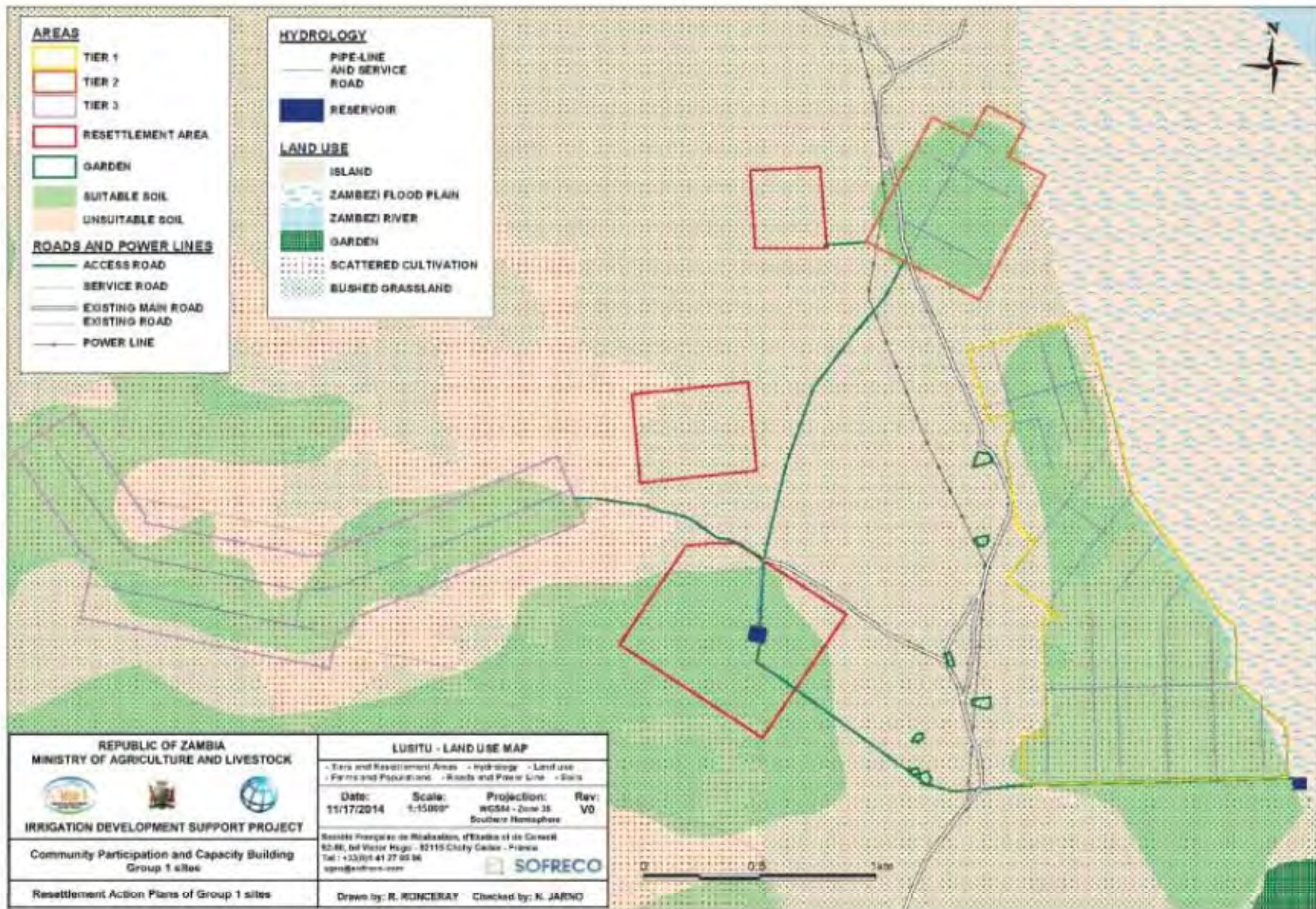
The cadastral maps also show the soil suitability for irrigation: unsuitable soil is shown in pink and suitable soil is shown in green.





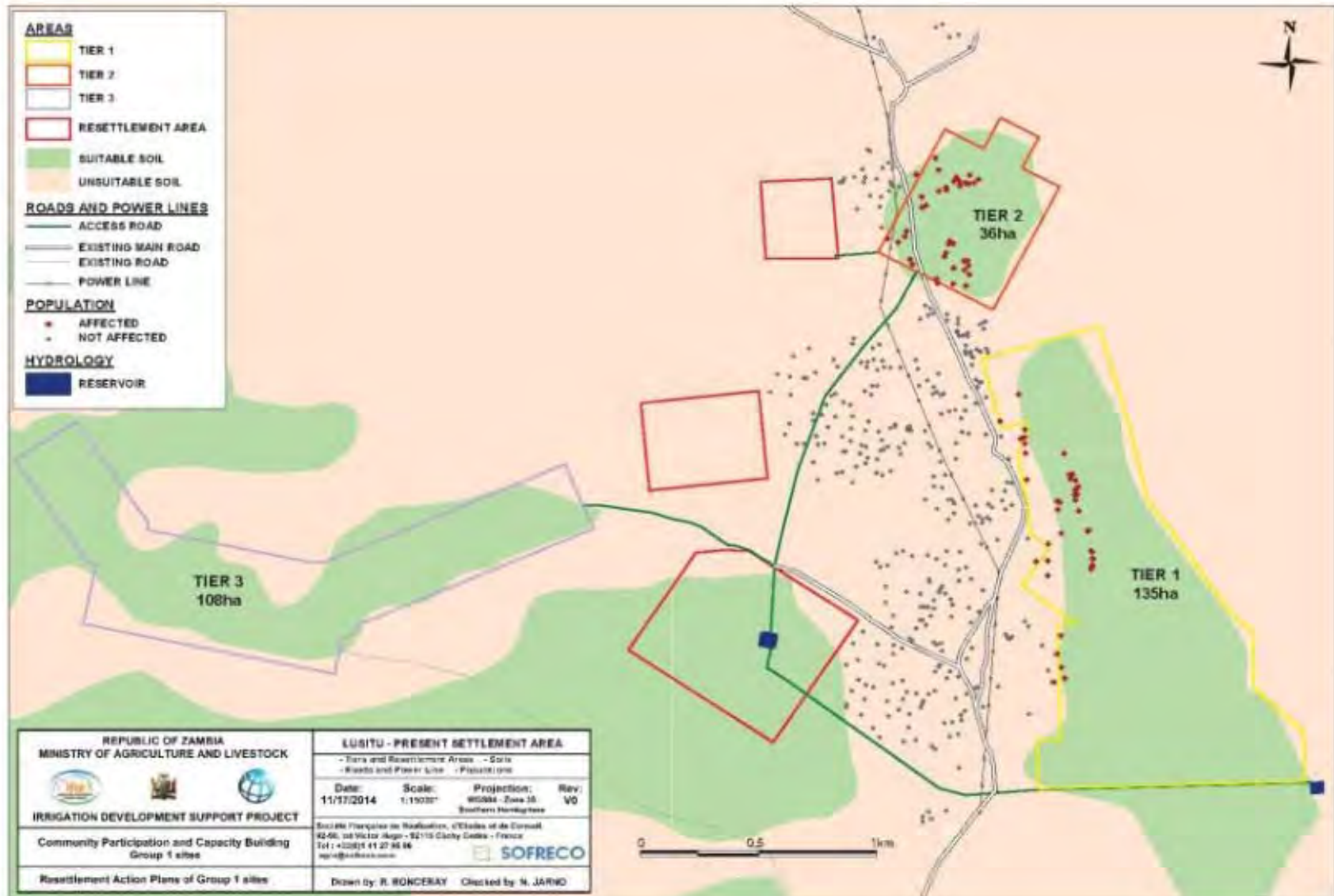
MAPS 2: LAND USE MAP

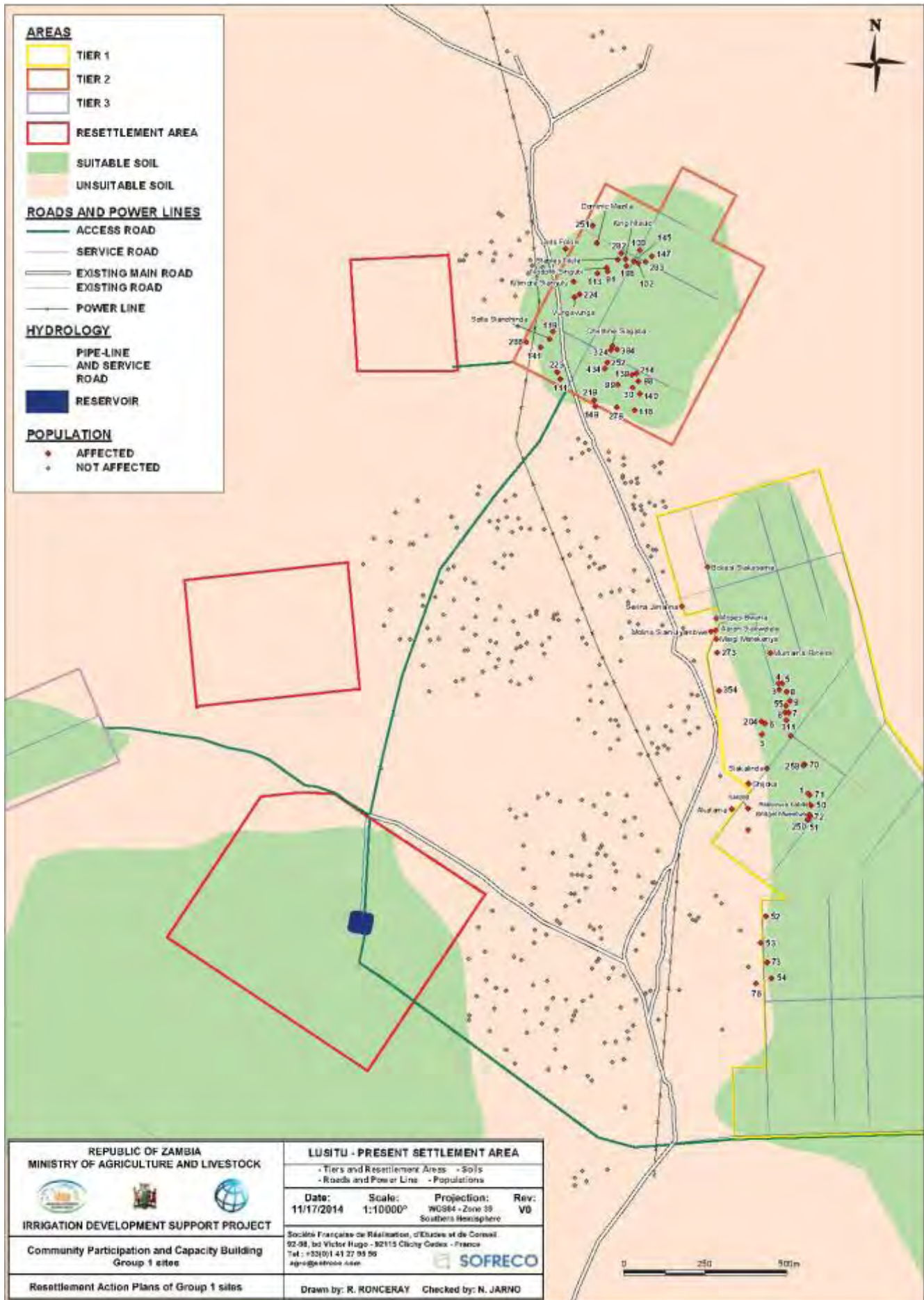
The purpose of the Land Use map is to describe the current land use in order to anticipate the changes due to the project implementation. The project will not affect substantially the land use in the Lusitu area. Outside the areas proposed for project development, the map shows extensive scattered cultivation and bushed grassland, the areas of which will remain significant with project implementation.





MAPS 3: PRESENT SETTLEMENT AREA

The Present Settlement Area map presents the actual location of the Lusitu households: in grey, not affected by the scheme or the resettlement areas; in red, affected by the scheme or the resettlement areas. The present settlement map was used to identify affected households and define the number of new housing units to build in order to reallocate those households.





REPUBLIC OF ZAMBIA MINISTRY OF AGRICULTURE AND LIVESTOCK  IRRIGATION DEVELOPMENT SUPPORT PROJECT Community Participation and Capacity Building Group 1 sites	LUSITU - PRESENT SETTLEMENT AREA			
	- Tiers and Resettlement Areas - Soils - Roads and Power Lines - Populations			
	Date: 11/17/2014	Scale: 1:10000 ⁿ	Projection: WGS84 - Zone 38 Soutiers Hemisphere	Rev: V0
Société Française de Réalisation, d'Etudes et de Conseil 92-98, bd Victor Hugo - 92115 Cligny Cedex - France Tel : +33(0)1 41 27 93 96 afr@sofreco.com				
				
Resettlement Action Plans of Group 1 sites		Drawn by: R. RONCERAY Checked by: N. JARNO		

MAPS 4: RESETTLEMENT AREA

The resettlement area map shows the three resettlement areas identified in Lusitu, their linkage with the road network and their proposed internal layout. The average housing plot is closed to 0.80 ha as agreed with the Community.

