



REPUBLIC OF ZAMBIA

MINISTRY OF AGRICULTURE AND LIVESTOCK

RE-SETTLEMENT ACTION PLAN FOR MUSAKASHI IDSP GROUP 1 SITES

IRRIGATION DEVELOPMENT SUPPORT PROJECT (IDSP)

December 2016

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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
CP&CB	Community Participation and Capacity Builder
CSO	Central Statistics Office
DACO	District Agricultural Officer
DC	District Council
DDCC	District Development Coordination Committee
df	degrees of freedom
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
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
PPP	Public Private Partnership
PPSC	Participative Planning Site Committee
RAP	Resettlement Action Plan
RCC	Resettlement and Compensation Committee
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 or for inundation.
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.
Host Community	The population in the areas receiving resettlers is called the host community.
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 State land are all those actively using land. They may have dispensation from the District Council, they may have leases from the Commissioner of Lands, or they may be squatters.
Livelihood	Livelihood comprises capabilities, assets (including both material and social resources) and activities required for a means of living.
Project Affected	Project Affected People (PAP) refer to those within the project

People	area that will be affected by the Irrigation Project and/or the Resettlement Site. Affected people may or may not be displaced.
Replacement Cost	Replacement Cost is the method of valuation of assets that helps determine the amount sufficient to replace lost assets and cover transaction cost.
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.
Rehabilitation	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.
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 squatters.

1 EXECUTIVE SUMMARY

1.1 Characteristics of the Project

The Irrigation Development Support Project (MAL) plans to construct a pressure irrigation scheme with a development area of 1,054 ha in the Musakashi Block Farm on the right bank of the Kafue River in the jurisdiction of Mufulira District Council. Water will be supplied from two pump stations on the right bank. The right bank development will serve commercial, emergent and smallholder farmers. Smallholder 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 state land to 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 who is using the land at present (individuals have a variety of land rights, from squatters to holders of 99-year leases, see section 3.3.2) and who in future will hold the head lease under statutory law.

1.2 Area and Numbers of People Affected

The number of people resident in the Musakashi area and enumerated in the RAP census is about 1,826 people in 362 households. Many households associated with the block farm are not resident. Subsequent investigations suggest the resident and non-resident population combined is 3,196 people in 611 households. The vast majority are smallholder farmers (see section 3.2) but the Musakashi population does not resemble a traditional community: the District Council sets farm size exogenously and many households are either non-resident or incomplete at site. However, all Musakashi households, plus disadvantaged resident individuals including about 120 youths, will receive an irrigation allocation. It is envisaged that 19 emergent farmers will be recruited from outside the scheme (see section 8.3.4).

About 115 households will be displaced and moved from their present location of residence within the development area and relocated in resettlement areas totalling 445 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 115 displaced households will also receive an average allocation of 3.9 ha of land as a substitute for rainfed farming activities within the development area: this is more than the modal farm size planned by the District Council when the Block Farm was being established (3 ha). The allocation in Musakashi is much higher than Mwomboshi allocation as the average soil condition in Musakashi is less productive than in Mwomboshi. In addition, all Musakashi households will receive an irrigation allocation from inside the scheme averaging 0.53 ha. But the Musakashi scheme is large, and some households may have to travel up to 12 km to access it. Because the development area will not displace these households, they will not be entitled to any allowances for relocation. It is expected that farmers who want to cultivate the irrigated plot will construct a temporary housing opportunity near to the irrigation scheme.

1.3 Eligibility Criteria

All households permanently or temporarily residing in the Musakashi area are eligible to receive an irrigation allocation from the Community Land Trust.

Households at present resident in the development area (about 115 households) will receive a low cost rural house. Households resident and farming in the development area or Resettlement Site will have access to a house plot in the resettlement areas with an average size of 3.9 ha.

Households farming but not resident in the development area (about 35 households) will receive an allocation of rainfed land outside the irrigation scheme, also 3.9 ha.

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.

Households benefitting from use of the development in Tier 1 or resettlement area will receive automatically renewable 1 year sub-lease contracts from Community Land Trust. Title 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 in Tier 1 will be allocated in perpetuity (in line with general principles and protections acceptable to the World Bank). The Community Land Trust will make housing allocations with the same tenure arrangements. PAPs currently having rain fed land with title within the development will be compensated with rain fed land with title located outside the development areas.

All households in the Musakashi area will be entitled to an irrigation allowance, which will significantly increase their annual farm and household budget through the twice-yearly cultivation of maize, vegetables and legume crops. The irrigation allowance, averaging 0.53 ha per household 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 February 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 Musakashi site on 16th 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, MAL and the Participatory Planning Sub Committee already established to handle community issues at the project site. 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 from the present chaotic system of full, partial and non-existent title in the project development and resettlement areas to statutory land under a Community Land Trust. The land transformation 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 Musakashi Irrigation Project is envisaged to be 18 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 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 13.08 million (USD 2.11 million) including contingencies.

SIGN:.....

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2 INTRODUCTION

2.1 General Description of IDSP

2.1.1 Project Description

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, Mwomboshi in Central Province and Musakashi in Copperbelt) presently occupied by small scale farmers. 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 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. At Musakashi it will therefore be necessary to transfer land ownership, which is already under statutory law, to the Musakashi community so they may enter into such contracts.

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 Draft Detailed Design of Group 1 Sites, Z-A Consultants, October 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, MLGH and CSO.

2.1.2 Location of the Project

Musakashi site is synonymous with the Musakashi Block Farm under the jurisdiction of Mufilira District Council in the Copperbelt of Zambia. It is located on the right bank of the Kafue River at about 1,250-1300 m above sea level. The area can be accessed by a gravel road from the main Kitwe-Mufilira road, about 35 km north-west of Kitwe. The coordinates of the scheme are 8606000 – 8614000 and 618000 – 628000. The area to be irrigated is within two farm areas, 4288 (SADA) and 4287.

2.1.3 Reasons for Displacement

IDSP proposes to establish an irrigation scheme of 1,054 ha on the right bank of the Kafue River, which will be supplied by two pump stations located on the bank. The development area must be cleared of settlement and agriculture to allow construction. On completion irrigation allocations will be made to commercial and emergent farmers, as well as allocations in Tier 1 (and possibly Tier 2) to households resident in the Musakashi area. The right bank is lightly settled with resident and non-resident farm families, some of which have homesteads and other fixed assets within the designated development area. These will have to be relocated. While the area under rainfed cultivation is relatively small within the proposed irrigation scheme, this will also have to be relocated before the irrigation blocks are developed.

2.2 Summary of the Area and the People to be Displaced

Musakashi is a MAL Block Farm (comprising Farm 4288 (SADA), 2,711 ha; and Farm 4287, 1,873 ha) that has never been fully developed with water supply and road access. As described in section 4.4.1, sometime before 2011 82% of the Musakashi land area was allocated in 910 holdings to representatives of an estimated 4,000 people belonging to 788 households. However, many of the holdings were never occupied or later abandoned leaving, according to the CSO census in the dry season of 2013, only about 1,826 people in 362 households distributed irregularly over the Musakashi area depending on access, land suitability and water availability. Subsequently a further 249 households with about 1,377 people were identified by the PPSC. The household heads were not on site during the census and only 63 (41%)

were located on the list of 910 holdings. It is probable that the present population of Musakashi is about 3,196 people in 611 households, but less than half of this population is resident. An update to the census will have to be undertaken prior to the final determination of land allocation and compensation for housing by the CLT.

According to the Mufulira District Council none of the holdings on Farm 4287 allocated ever achieved full tenure status, though some have letters of acknowledgement (or better) of payment for land rights from the District Council. Farm 4288 (SADA) has seen more activity in the land market. Land Commission records show that in 2014 1,325 ha (70%) are under title (see Table 8-1). To complicate the situation further, about 33% of households on the Musakashi site have no formal rights and may therefore be considered as squatters on State Land with no legal status to occupancy.

Finally it should be noted that unlike other Group 1 sites (on customary land), farming in Musakashi is not a functioning community system (see section 8.2.2). Farm size is set exogenously (by the District Council). Household composition in Musakashi is selected by economic factors rather than demography: many households are not truly resident at site and activities outside also support incomes. Farming is almost a hobby for some households – the value of production is only US\$ 150 per cultivated ha or half that reported from Group 1 sites on customary land. From a low base, the incremental return both to the project and the farm family is expected to be considerable (especially as the irrigation allocations may be a little larger) and a strong incentive to adopt irrigation. Probably the biggest project risk at Musakashi is farmers not being prepared to commit to the effort to farm an irrigation allocation.

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 proposed 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 problem 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 two additional complications at Musakashi. The first is that commercial farming (for reasons of economies of scale to attract investors) will account for 71% of the planned net irrigation command area, resulting in present residents having access to a much smaller land area with a larger proportion of less suitable land than they do at present. Only 38% of the Musakashi area is suitable for irrigation because of limitations of soil depth and coarse material in the profile: these limitations will equally affect the suitability of land for rainfed farming. The second complication is the irregularity of distribution of the present population: about 50% of households in the scheme are loosely clustered around the areas recommended for irrigation development, but the other 50% are located in the SW of Musakashi (7 to 12 km distant) and will not benefit from the proposed irrigation unless they re-locate or travel daily to site. The present situation therefore presents a challenge to develop a coherent and equitable RAP.

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 Musakashi area
- Move them to an alternative site within the Musakashi 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 but a contradiction. If the affected population is moved from the Musakashi 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, particularly as the political consequences of moving anyone outside that cannot be demonstrated to be a squatter would be severe.

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 (rather than resettlement) is described in detail in the ESIA.

2.3.3 Objectives of Resettlement

General principles governing re-settlement and compensation at IDSP are described in section 4. These recommendations have been discussed and formulated with the guidance of IDSP/MAL and the World Bank and are briefly summarised as follows:

- Those households presently living inside areas designated as future irrigation blocks will be moved to a resettlement area as close as possible outside the block and be compensated with a house (an estimated value of ZMW 55,000) constructed by IDSP. Those households having fixed assets worth more than a new house will be reimbursed in cash for the balance.; in addition they will receive a disturbance allowance and support to re-locate the household
- Those households presently farming inside areas designated as irrigation blocks will be allocated a similar area outside the block will receive title through the Community Land Trust regardless of their current tenure status..
- All households in each community affected will receive an accessible irrigation allocation and support to begin irrigated farming operations: the irrigation allocation is shown to provide ample livelihood restitution for the

small amounts of rainfed farm land that may be lost by some of the larger farm categories.

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 be compensated accordingly. According to GOZ 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 expense, new housing for those displaced from irrigation blocks. This new housing will also compensate for the loss of temporary fixed assets such as grain stores, kraals and barns that can easily be reconstructed. It may however be necessary to compensate for loss of perennial crops. The advantage of this “compensation in kind” means monetary transfers are reduced. The disadvantage is that the principle of compensation is weakened: some households (particularly the poorer) will receive much greater compensation than the value of the assets they have lost.

A major challenge at Musakashi is to determine the residence status of households in the scheme and distinguish between those with title granted by the Commissioner of Lands, those with land use rights granted by District Council/MAL in the period 2009-2012 and those with no demonstrable land rights (“squatters”). Section 8.2.2 lists those with full or partial title: there are only 11 title holders, eight of which are on short lease soon to expire and only 3 on full title. The number of squatters on the site is discussed in section 3.3.2: it is concluded that about 33% of households enumerated in the RAP census could be considered as squatters. But the Commissioner of Lands has not ratified the land rights of the majority and land rights acquired through the District Council do not represent full title.

Within the Musakashi community there are other potentially vulnerable groups whose interests should be safeguarded. The resource status of squatters, the food insecure and female headed households were all examined in depth but it was concluded that “youth” is the only category which requires special safeguard procedures (assuming squatters are granted land rights as described above), in order to secure transfer of inter-generational benefits of the project. There are about 300 people between the ages of 16 and 25 (16% of the population) and 120 young males and 100 young females who may imminently marry and establish HH of their own: a potential increase in HH numbers in Musakashi in the next few years of 33% (assuming they inter-marry). The RAP recommends a “youth allocation” which is transferable on marriage, see section 8.3.4.

Irrigation allocation strategies have been formulated to demonstrate the feasibility of land re-organisation with-project. Section 8.3.4 and the Cadastral Map show that about 50% of Musakashi households have access to the planned irrigation blocks from their current location. The other 50% will not have access (they live up to 12 km away) unless they move. It is assumed they will not wish to do this: they would lose access to their entire rainfed farm in return for an irrigation allocation. Nevertheless by their presence in Musakashi they are entitled to an irrigation allocation, and community consultation

suggested that some at least would want to take it up. The Cadastral Map also indicates the proportion of farmland within the irrigation blocks that will have to be re-located: even if this cannot be replaced with land of similar quality, small and medium farms still end up with slightly larger farms once their irrigation allocation is added.

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 for the small amounts of rainfed farm land that may be lost by some of the larger farm categories (see sections 8.3.4.1 and 8.3.5). 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 Irrigation Development 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.

2.3.4 Estimates of Land Acquisition and Resettlement

About 245 ha of state land under 99-year lease (Farm 4288, plots 9899 and 9902) will be acquired by IDSP from two private holders at Musakashi and compensated at a rate agreed by a professional quantity surveyor.

All Musakashi land is under statutory tenure at present. However, the land to be developed for irrigation (1,054 ha and resettlement areas (407 ha) will be delimited by Surveys Department following the due process and a 99-year lease will be prepared by Commissioner of Lands in favour of a Musakashi Community Land Trust which will administer the development and resettlement areas on behalf of the community.

About 20% of Musakashi households will be resettled from the development area. About 115 houses will be constructed in resettlement areas totalling 407 ha. 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 6.32 million. Ten households have fixed assets worth more than a new house. These households will be reimbursed in cash for the balance, the cost of this will be in the order of ZMW 1.17 million. Nine asset holders in households with more than one asset holder will receive monetary compensation to the value of their fixed assets, ZMW 53,120. Perennial crops (ZMW 1.46 million) could be reimbursed separately to allow owners to re-plant quickly.

There will be some re-organisation of rainfed holdings, but affected households moving from the development area would receive an average 3.9 ha each within the total of 445 ha of the resettlement areas. 3 ha is the modal size of allocation which was made available by Mufulira District Council in the original site planning, so the compensation for moving the rain fed farm would be generous. 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 and the specific instructions in CP&CB Terms of Reference. The RAP survey teams were fielded with the support of the Ministry of Agriculture and Livestock (Land Husbandry, Technical Services Department), the Ministry of Local Government and Housing (Valuations Department) and Ministry of Finance (Central Statistics Office) 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, the basic data on which resolution 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 (Ministry of Finance) undertook a census of population in the project areas. Field teams were composed of one Supervisor, Enumerators and accompanied (full time) by one Representative of Mufulira Municipality;
- 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 Musakashi 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, listing and locating households by GPS. Later, CSO used the household list to conduct interviews. 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 8.2.1) and asset inventory by household (section 8.2.3). The RAP Census was designed by CP&CB. A questionnaire and supporting field manual are included in this report in Appendix G. The data was entered, analysed and reported by CP&CB. The socio-economic survey was in fact a census which accompanied the population census.

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 7th September 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 project beneficiaries will be eligible for resettlement entitlements, specified in the Entitlement Matrix shown in Table 4-1 and Table 4-2 and quantified in APPENDIX B: Assets Compensation Matrix.

3.2 Results of the Census

3.2.1 Demographic characteristics

The population census was carried out at Musakashi during the period 23rd August to 7th September 2013. A questionnaire was administered to each household by the CSO field team which 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 1,826 people in 362 households, a population density of about 42 people per km² (compared with Mwomboshi, 190 per km² and Lusitu 283 per km²). Subsequently a further 249 households with 1,370 people were identified by the PPSC. The household heads were not on site during the census and only 63 (41%) were located on the list of 910 holdings. It is probable that the present population of Musakashi is about 3,196 people in 611 households, but not all this population is resident. This can be compared with previous population estimates. The IDSP Musakashi pre-feasibility study (FINTECS 2010) obtained a population estimate for the site of about 3,600

people in 600 households. The subsequent Musakashi Land Inventory Report 2011-12 (Irrigation and Land Husbandry and Land Departments) reported 418 households with a population of 2,085 people in eight zones.

A second “census” was carried out in 2011 in the form of a farm register prepared by Block Supervisors which includes 910 entries, 68% of which are in Farm 4287 and 32% in Farm 4288, see Table 3-1. Because MAL is the controlling authority for the use of State land in the Musakashi Block (see Verification of the Land Status of Musakashi (Farms 4287 and 4288), National Coordination office, IDSP April 2013) the Block Supervisors report has been taken as the official record of allocation of land holdings at that date.

Referring to Table 3-1, over 40% of entries refer to female land holders. This suggests that the farmers listed are not equivalent to households: it is possible that husband and wife (or even another member of the same household) can both be land holders.

To attempt to convert land holders to the equivalent number of households, an adjustment based on names of holders apparently of the same household and listed adjacently on the list reduced the list by 13%, leading to an estimation of 4,300 people in 788 households¹.

Table 3-1 Distribution of Land Holders and Households

Farm	Block	Zone	Block Register 2011				RAP Cenus 2013		
			Male Holders	Female Holders	Total Holders	Adjusted to HH	Male HHH	Female HHH	Total HH
4287	Kangwena	Luanshimba	143	116	259	203	23	11	76
4287	Kangwena	Shangira	95	56	151	136	33	19	52
4287	Kangwena	Kobvina	49	29	78	70	62	14	39
4287	Kangwena	Kwasikanyika	37	26	63	55	15	9	24
4287	Kangwena	Silungwe	21	31	52	48	8	1	9
4287	Kangwena	Kwa Phiri	8	7	15	15	10	2	12
Sub-total Farm 4287			353	265	618	527	151	56	212
4288	Musakashi	Kapolopolo	46	15	61	56	31	4	35
4288	Musakashi	Chimbamilonga	34	28	62	56	11	9	20
4288	Musakashi	Kabanana	31	21	52	44	9	12	21
4288	Musakashi	Tobombeshe	16	11	27	20	6	5	11
4288	Musakashi	Kafue	36	23	59	55	25	17	42
4288	Musakashi	Nsofu	24	7	31	30	11	3	14
Sub-total Farm 4288 (SADA)			187	105	292	261	93	50	143
		Not located					7	7	7
Total for Musakashi			540	370	910	788	251	113	362

Despite the adjustment between holders and households, the number of holders remains substantially higher than number of HH reported in the RAP

¹ This approach was validated by a detailed comparison of the 2013 census with the Farm Register. Of 362 household heads enumerated, 65% were included as land holders on the Block Supervisor's Register. Of their household members a further 59 were included as land holders on the Block Supervisor's Register. Therefore about 20% of land holders are not reported as household heads in the 2013 census. This also means that a household can have two or more holdings: some households reported in the census have up to four in the names of wives, sons, daughters and nephews.

census 2013, though quite a high proportion of farmers in residence could be located on the Farm Register, see Table 3-2.

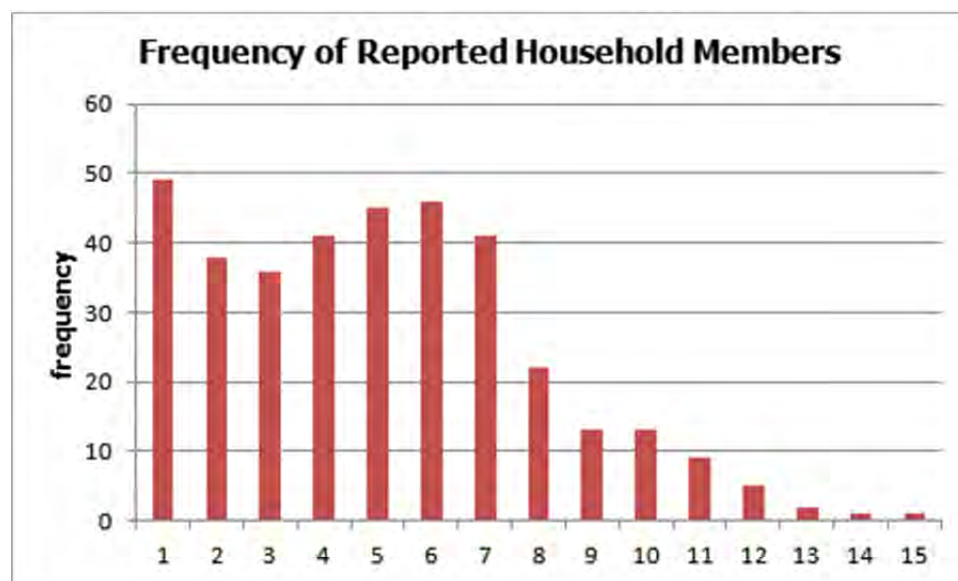
Table 3-2 Comparison of Farm Register and HHH reported in 2013 Census

	Number of Farms on register	HH in 2013 Census	% of farms existing in 2013	In 2013 census and on Farm Register	% on register
Farm 4287	527	143	27%	103	72%
Farm 4288 (SADA)	261	212	81%	133	63%
Not known	0	7		0	0%
	788	362		236	

The Table suggests that many farmers on the block register may not have taken up residence, or have subsequently left, and some of those that are resident on the site may not be the people registered as land holders by the Block Supervisor. In fact, the situation in respect of the recording of allocated holdings on the Musakashi block farm is chaotic. It is discussed further in section 3.3.2.

The frequency of household size is shown in Figure 3-1. The large number of single person households is surprising: it may be that single person households indicate non-residence or temporary residence of the household. The maximum number of members reported in one household was 15 and the mean was five members (SD=3.0). The average age of the population (1,714 of which reported their age) is 27 years of age and the sex ratio is 1,140 males to 1,000 females. This ratio (which is the opposite of that normally observed amongst residents of a permanent village in Zambia, including Lusitu and Mwomboshi) suggests male in-migration.

Figure 3-1 Frequency of Reported Household Members



The Musakashi site was sparsely inhabited until the early 1990s when ex-mine workers (amongst others) began seeking farmland on or close to the

Copperbelt where they had been working. Figure 3-2 shows that only four people over the age of 25 reported having been on the site all their lives. Younger people in residence appear to be the family members of these retired workers, but even the youngest may not have spent all their lives on the site.

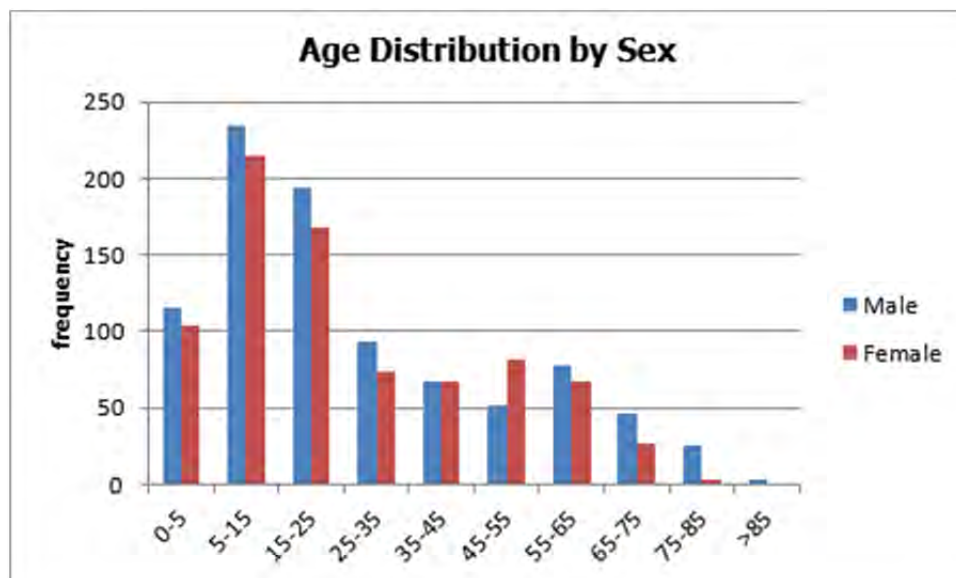
Figure 3-2 Years of Residence by Age



Figure 3-3 suggests that the birth rate is not high. This year (if the presence and age of the very young are reported in the census correctly) the crude birth rate at the site is about 21 per 1,000, which is only half the national average for Zambia.² Nevertheless, the proportion of the youth group at Musakashi is still high: about 58% of the Musakashi population that reported their age as less than 25. The Figure also shows that women outnumber men only in the age class 45-55.

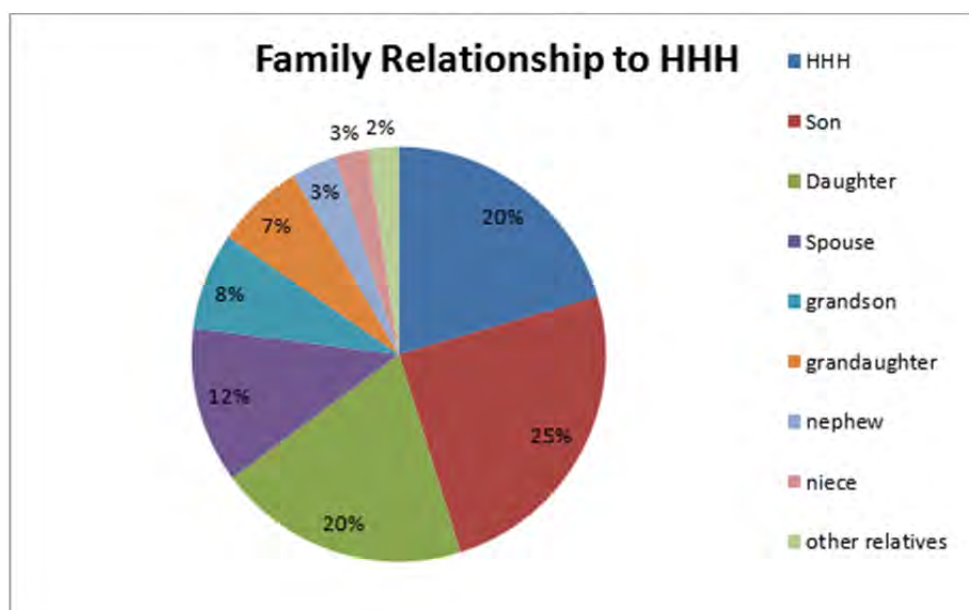
² http://www.indexmundi.com/zambia/birth_rate.html

Figure 3-3 Age Distribution by Sex



The overall family structure of Musakashi households is shown diagrammatically in Figure 3-4 in relationship to HHH. The family appears to have an extended structure, with only 77% of people being reported as household heads, spouses and sons and daughters. Further, the proportions are not as expected: sons outnumber daughters and HHH outnumber spouses. 23% are other relatives (though 90% of those are recorded as grandchildren and nephews and nieces). The data suggest that the “households” reported are incomplete in the sense that some family members are not resident on site and other relatives have joined the family group at the site, perhaps on a temporary basis.

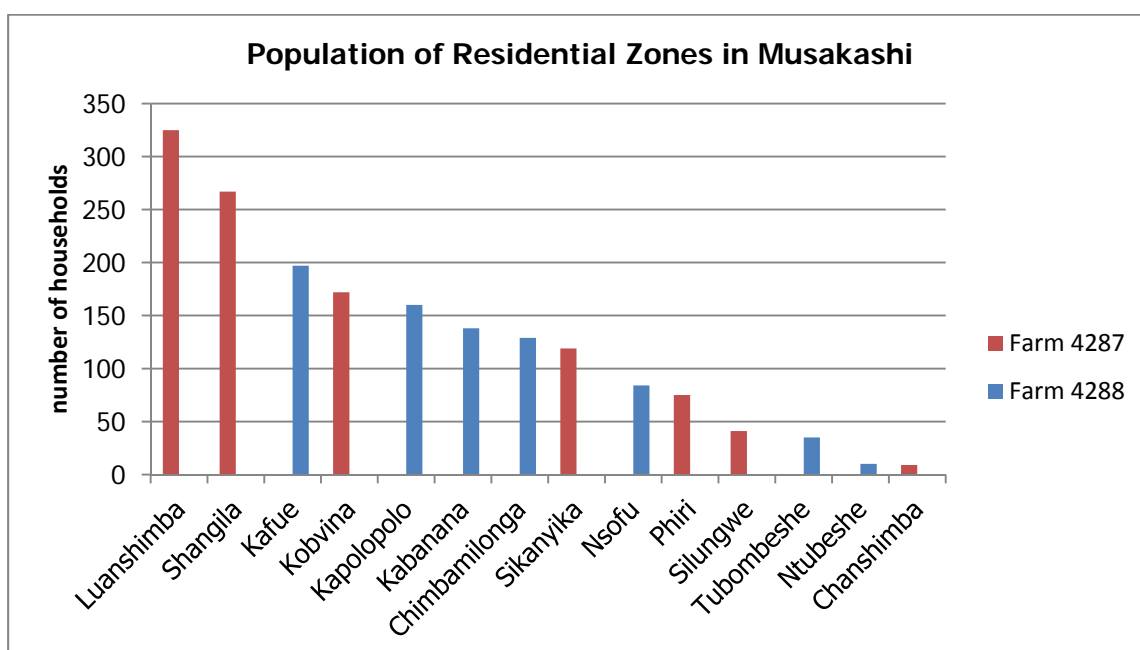
Figure 3-4 Family Relationship to Household Head



The incidence of recorded polygamy in Musakashi HHH is negligible – only one HHH reported having two wives. This is congruent with both the findings of the Musakashi Land Inventory (see [\(Musakashi Irrigation Project Land Inventory Report 2011-2012](#), Irrigation and Land Husbandry and Land Department, 2012) and the Pre-feasibility Study's [Socio-economic Baseline Report](#), June 2010.

The area of survey is made more complex by households reporting zones as their location of residence. These zones may be “flags of convenience” for obtaining subsidised agricultural inputs as well as convenient administrative areas for extension activities. The names of the zones are shown in Figure 3-5. 61 households did not report their residential area. There does not appear to be any significant difference in the length of time that the zones have been established.

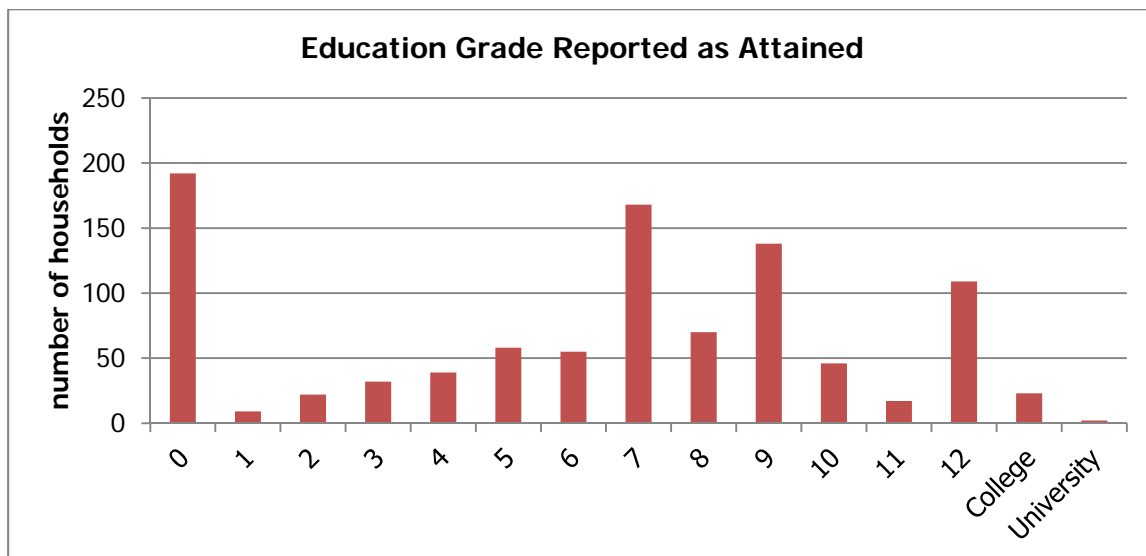
Figure 3-5 Population of Reported Residential Areas in Musakashi



The main occupation of Musakashi residents was reported to be farming. Of the total population 41% consider themselves to be farmers. 35% are either school pupils or children not yet attending school. 20% reported no occupation. Considering adults of working age, 92% are farmers and a further 2% are workers (probably on-farm). Of the remainder the occupations include business (8), miner (6), driver (5), bricklayer (4), charcoal burner (2), government worker (6), marketing agent (2), and security guard (2). Individuals reported their occupations to be electrician, soldier, tailor and welder. 834 adults reported an occupation, 669 of them said they were farmers or farm workers.

Figure 3-6 shows that Musakashi residents over 16 years old usually achieve an education of above grade 7 or higher. Only 170 persons over 16 years old did not report any educational level attained – one may assume that their access to education has been minimal so this number was added to those reporting no education attainment.

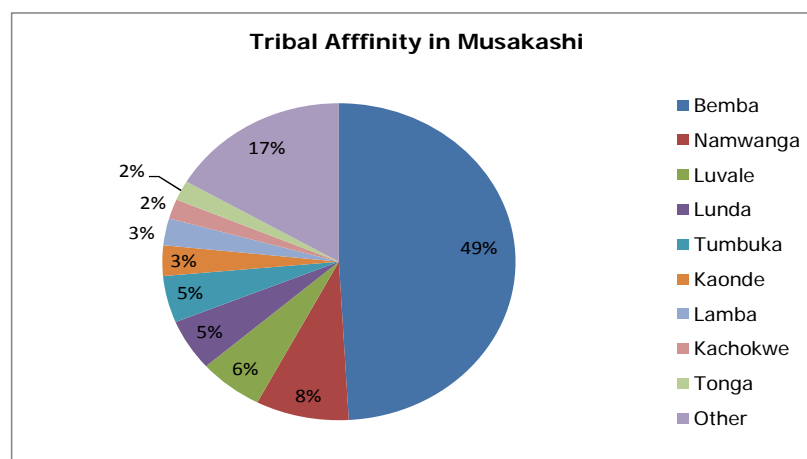
Figure 3-6 Educational Grade Reported as Attained



An unexpectedly small number of persons (27) were reported as disabled in the census. Blindness or partial sight was the most common (13 individuals). Individuals reported epilepsy, anaemia, asthma, heart disease, HIV and mental illness. About 10 accidents or cases of temporary sickness were also reported. No self-reporting of HIV/AIDS occurred. It was necessary to resort to medical records to uncover statistics, which are reported in the ESIA.

A very large number of tribal groups are represented in Musakashi. Figure 3-7 shows the proportion of those tribes for which at least 30 members were reported in the census. Bemba are clearly the most frequently encountered, followed by Namwanga, Luvale and Lunda. However 17% of the population of 1,826 people belong to a further 27 named groups. The detail is not reported here, but the most common were Kalundu, Kaonde, Kunda and Lala.

Figure 3-7 Tribal Affinity in Musakashi



3.2.2 Land Organisation

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 Musakashi and the land held "outside". Only about 3% of the

total land area claimed by respondents is outside the Musakashi block. If this is so, it suggests that even though some respondents may have other residences outside Musakashi (because their family structure reported on site is atypical, see section 3.2.1), their land resources are mostly inside.

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 3-3. 33% of households have what was classified as a garden plot and nearly all respondents claimed that their garden plot was “irrigated”, though it is difficult to conceive how an average parcel area of 0.31 ha can be irrigated without gravity or pumped supply (but nearly 80% of garden plots were less than 0.25 ha).

Table 3-3 Holders' Parcel Areas

	Holders	Area, ha	Fallow, ha	Average ha	% of HH
Garden plot	121	37.70	0.35	0.31	33%
Parcel 1	336	705.77	0.00	2.10	93%
Parcel 2	81	59.26	3.00	0.73	22%
Parcel 3	50	14.54	0.00	0.29	14%
Parcel 4	21	6.50	0.00	0.31	6%
Total		823.76	3.35		

Note: Parcel 1 includes a cultivated holding of 117 ha (verified). Omitting this record, the average size of Parcel 1 is 1.75 ha.

Parcels 1-4 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: only 7% of households had a Parcel 3 of significant area (over 0.25 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 land because the proportion on each parcel does not conform to any expected rotation system.

The 2011 Farmer Register (described above) reported the area in farms on Farm 4287 as 1,835 ha (98% of the Farm’s area) in 618 holdings. The total area of farms in Farm 4288 was reported to be 1,752 ha (70% of its area) in 292 holdings. These estimates of population and farm areas will be incredible to any person who has visited the site. Hungwe (Soil Survey of the Proposed Musakashi Site, IDSP April 2012), who must have traversed most of the area in the course of the soil survey remarked of Farm 4287: “*There is a sprinkling of human settlement on farm 4287, with a few arable plots of not more than 5 ha each having been opened up on this farm. The rest of the farm is bush...*” and of Farm 4288: “*Many of the original settlers appear to have left the farm and most of the farm units do not show any meaningful land clearing, arable farming or livestock husbandry...*”.

There is a better coincidence between the cultivated area reported in the Farm Register and the census. The Register (2011) records a total of 873 ha, 72% of which was in Farm 4287. The census (2013) reports 823 ha, of which 80% was in Farm 4287. However, the correspondence is not so close when examined in detail, as shown in Table 3-4. The correspondence of cultivated area between zones is poor. In addition 251 cultivated ha were reported between 9 large farmers in the 2013 census. In the Farmer Register only two farms with cultivated area greater than 10 ha were reported.

Table 3-4 Distribution of Cultivated Area between Zones (ha)

	Farmers Register 2011		Census 2013	
	Register cultivated	farms ≥ 10 ha (2 cases)	Cultivated area (ha)	farms ≥ 10 ha (2 cases)
Chimbamilonga	49	0	28	0
Kabanana	22	0	36	0
Kafue	39	0	73	0
Kapolopolo	85	27	167	118
Kobvina	78	0	87	24
Lwanshimba	278	13	162	54
Musakashi			2	0
Nsofu	33	0	28	0
Ntubeshe			15	15
Phiri	24	0	26	0
Shangila	135	0	70	0
Sikanyika (Kwashkanyika)	68	0	75	40
Silungwe	47	0	12	0
Tubombeshe	17	0	19	0
Missing zone location			22	
Total	873	40	823	251

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 3-5. The areas were derived by dividing the total number of enterprises reported in the parcel into the cultivated parcel area.

Table 3-5 Crop Enterprises by Parcel, net ha in 2012/13

	Garden	Parcel 1	Parcel 2	Parcel 3	Parcel 4	Total
Fruit						
banana	1.00	10.56			0.50	12.1
Fruit		1.25				1.3
pineapple	0.04					0.0
Vegetables						
amaranthus	0.08					0.1
cabbage	2.31		1.00			3.3
carrot	0.16					0.2
chibwabwa	0.23					0.2
chinese cabbage	0.90					0.9
eggplant	2.20					2.2
green pepper	0.13					0.1
impwa	1.86		0.25	0.25	0.13	2.5
Okra	1.26		0.13	0.63		2.0
onion	1.82					1.8
pumpkin	0.49					0.5
Pumpkin leaves	0.05					0.1
rape	6.39			0.25		6.6
spinach	0.13					0.1
tomato	10.05	0.75		0.25		11.1
Vegetables	0.06					0.1
watermelon	1.33	5.00				6.3
Pulses and Oilseeds						
bambara nuts		9.48	3.00	1.58	1.00	15.1
beans	0.41	8.07		0.13		8.6
groundnut		61.69	6.63	1.56		69.9
pigeonpea		1.33				1.3
soya beans		1.01				1.0
sunflower		0.75				0.8
Roots						
Cassava	0.21	61.73	10.33	1.38	0.50	74.1
irish potatoes	0.44	16.04	1.63	0.88	0.50	19.5
sweet potato	0.13	38.61	7.56	4.65	1.50	52.5
sweet potatoe leaves	0.04					0.0
yam		0.17	0.25			0.4
Industrial crops						
sugar cane	0.49	1.83		0.13		2.5
Cereals						
green maize	0.51					0.5
maize	4.93	466.77	23.50	1.50	2.00	498.7
Maize for popcorn		4.00				4.0
millet		8.75	0.50	1.13		10.4
rice		0.75				0.8
sorghum		5.42	1.00			6.4
Total	37.64	703.97	55.76	14.29	6.13	817.8

The garden parcel is mostly (78%) cultivated with a wide variety of vegetables the most important of which are rape and tomato. There are also small areas of maize grown as both grain and corn on the cob. Parcel 1 is mostly in cereals, particularly maize, with smaller areas of oilseeds, pulses and roots. Parcels 2, 3 and 4 are dominated by roots (cassava and sweet and Irish potatoes), with smaller areas of maize. The total area cultivated to known crops in 2013 is reported as 818 ha.

3.2.4 Control and Tenancy

Respondents were asked who “controlled” (assumed to be equivalent to provision of inputs and disposal for sale) each plot within the garden and parcels. The results are reported in Table 3-6. The results are incomplete, but it would appear that the partner(s) of the HHH tend to control about 10% of the total household plots. Some plots are cultivated for family use. An interesting element is the interest of “workers” in a few plots – possibly in (part) return for work on the farm, hired labour is allowed a portion to cultivate on their own account.

Table 3-6 Reported Control Over Individual Plots

	Garden	Parcel 1	Parcel 2	Parcel 3	Parcel 4	Total
HHH	163	268	2	2		435
spouse	16	23	8	4	1	52
Family	20	9	6	3		38
other family members	5	8	0	0	0	13
Workers	5	0	0	0	0	5
Total	209	308	16	9	1	543

Respondents were asked how they viewed their occupancy status of each plot. Those who responded were quite clear that their occupancy was on State land. Not one however reported that they held title, which is surprising as apparently many farmers claim they have “papers”. There were no reports of informal or formal arrangements for sub-letting.

3.2.5 Livestock Ownership

One problem that the Musakashi block does not have in respect of the development of irrigation is the presence of livestock. Only 34 head of cattle was reported in the RAP census 2013 (in Tubombeshe, Shangila and Lwanshimba) and 34 goats. The Farm Register 2011 reported 28 cattle and 34 goats. The area provides poor grazing and many households may be only partially resident and therefore unable to provide the daily labour required for livestock husbandry.

3.2.6 Housing, Social Infrastructure and Services

3.2.6.1 Housing

The standard of housing is basic at the Musakashi site. Connection to utilities (electricity, water supply and sanitation) is almost non-existent. Most houses are constructed with local materials and many do not have solid roofing.

Houses are not designed for rain-water harvesting or the use of improved stoves. One reason housing is poor at Musakashi is because many structures are meant for temporary accommodation for non-residents rather than permanent houses.

3.2.6.2 Social Services

Social services are limited to basic schools, a rural health clinic, unreliable road access and a power line to which hardly any households are connected. A coherent potable water supply and sanitation system does not exist. The lack of social services can be attributed to Musakashi being a block farm designated for development and populated, but not yet implemented.

3.2.7 Energy and Water Supply and Sanitation

Only about 2% of households in Musakashi have an electrical connection in the home (despite the location of the power line bisecting the area). The supply of electricity is said to be moderately reliable. No public buildings have a power supply. Other commercial energy sources are scarce – there is nowhere locally to buy petrol or diesel and kerosene is available only in small quantities. Charcoal costs Kwacha 30 per 50kg, which is fairly cheap: woody biomass is in plentiful supply for now. The most commonly used fuel is locally gathered firewood, which is used for cooking. Candles and kerosene lanterns are used for light.

No homes have a water connection. About 15% of households have individual wells and a further 25% share a well. Other water sources are rivers and streams. Availability of water probably explains present population distribution – it is hardly practical to take up a farm allocation if it is kilometres away from any water supply. Households will stay near water and road access until the area is adequately developed.

It is reported that 80% of households have a pit latrine and the remaining 20% use the surrounding bush.

3.2.8 Infrastructure and Transportation

Musakashi is very poorly served for transport, with a few small private trucks in the area. The standard of the interior rural roads is very poor and there are a number of dambo crossings, which are unfeasible in the rains. The area is not on a regular bus route and hiring is necessary if transport is required on site. The number of private motorbikes and cars is very small.

There is a grain storage warehouse at Chambishi and a small go-down for use of the ZARI research station on the right bank of the Musakashi stream.

Cellular telecommunication is said to be good over 90% of the area and about 40% of adults have mobile phones.

The nearest hammer mills are at Simwanza, Hikembe and Mwanza. The cost of milling is about Kwacha 1.5 per 5 kg. Very little other agricultural processing is reported.

3.3 Identification of PAP Categories

3.3.1 Food Security

The crop areas reported in Table 3-5 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 Musakashi is available from the Engineering Pre-Feasibility Study and Socio-Economic Baseline Survey for Musakashi: Agronomy and Farming Systems Annex (IDSP 2010) (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. It was found that 66% of households were producing more kcals per annum than required for basic food consumption by the reported household members.

Beyond making this observation (and noting that cereal yields are nearly twice those reported at Lusitu and the proportion of area cultivated to root crops is substantially greater) it is not possible to go further with the data to hand. Many households are non-resident (implying that they may have unreported livelihood activities) and household membership data is incomplete (it may be over-estimated by inclusion of people who belong to other households, and under-estimated by un-reported family members who are resident elsewhere). Data collection and research on this issue will continue during the implementation of the RAP and prior to determination of final land allocation by the CLT. There is no way of identifying households who are intrinsically food insecure without more complete data on household members and livelihoods outside the Musakashi zones, which was beyond the scope of the census carried out.

3.3.2 Residence Status

One of the main difficulties encountered in the RAP census was to decide on the residence status of people reported to have an interest in land within the Musakashi Block Farm. The following sources of information are to hand:

- (i) List of land holders in 2011 from Farm Register (910 entries)
- (ii) List of land holders in 2011 adjusted to HH (788 HH, but unreliably estimated)
- (iii) HH list prepared by CSO/Zone Chairmen of "non-resident" HHH/land holders (108 records: this list is broadly equivalent to the list of 155 households with 823 people. See Appendix A2)
- (iv) HH list prepared by CSO/Zone Chairmen of "resident" HHH/land holders (234 records)
- (v) HH list from questionnaires administered to the population on site during the enumeration period (362 HH, of which 307 self-reported as "resident" and 55 as "non-resident")
- (vi) List of GPS locations of HH sites within the Musakashi area (463 locations with names).

As argued in section 3.2.1, list (i) is assumed to be the official list of land holders in 2011, whether or not holders were actually present at the time or had ever taken up their allocation.

Crosschecking and as expected, list (iii) has very little correspondence with (v) and it can be assumed “non-resident” HH reported by CSO/Zone Chairmen were not on site at the time of survey.

Unfortunately few of the land holders on list (iii) are also listed on list (i). Of list (iv), some but not all were interviewed and some but not all are listed on list (i).

The most important correspondence to establish is list (v) with list (i): these land holders were proven to be present at Musakashi at the time of survey and were in receipt of official land allocations from MAL in 2011. These households (236, see Table 3-2) have the strongest claim to land allocations, though it should be mentioned that they may not be occupying the particular parcel of land they were allocated and their “papers” may be insufficient to establish title (see footnote 7). This is unsurprising – infrastructure development is rudimentary in Musakashi and large areas of land are unsuitable for rainfed farming. A few HH interviewed claimed they were not resident at the site, but at least they can be demonstrated to be using their allocation.

There are only six households with a household head who does not have title, but with a household member who does. They also have a strong claim to allocated land, though they also may not be occupying the allocation designated to them. There are also fifty households with multiple titles: 48 households have two titles, one household has three titles and one more has four. 295 title holders were found in total during the census.

Households proven to be present in 2013 but not on the Block Supervisors 2011 list may be considered “squatters” (120 households). Their period of residence can be established from the questionnaires and it appears that 29 HH have appeared on the site since 2011. Residence of more than 10 years on site was claimed by 47 HHH. Clearly the rights of squatters should increase with their period of residence; in fact they have little protection under the law (see section 5.1.1.2). The squatter issue may be complicated: it has already been noted in section 3.2.2 that 98% of the area of Farm 4287 was divided into 618 holdings and 70% of the area of Farm 4287 was divided into 292 holdings. It would be imagined that squatters on the Block Farm at the time of land allocation would have actually received allocations – particularly as only about 40% of holdings appear to be occupied. But see footnote 4 for some of the history of farm allocations.

In summary the following categories of residents can be identified and characterised:

- Having been allocated a farm holding prior to 2011 but not present on the site at the time of census and not ordinarily resident (i.e. on list (i) but not list (v)) (910 individuals minus 295 individuals with titles identified in 2013 = 615 individuals);
- Having been allocated a farm holding prior to 2011 and present on the site at the time of census (i.e. on both list (i) and (v)) with sub-categories:
 - Household head has title (236 households),

- Another family member has title (six households),
- Multiple title households, a subset of above (50 households, all of which include title by household head),
- Not on either list (i) but on list (v) and therefore officially a squatter, but with strengthening land rights depending on their reported period of residence (120 households).

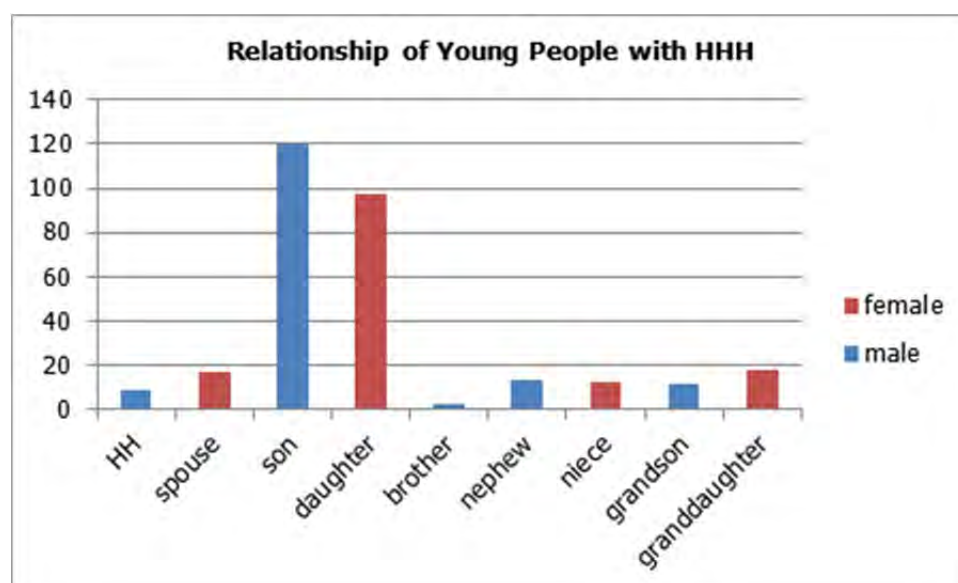
The categories described above are derived from a comparison of the Farm Register and the RAP census. Both data sources have their limitations.

3.3.3 Youth

The issue of the access of youth to land resources in Musakashi, while important, has to be considered in a different land tenure context compared with communities on customary land. As a block farm on State Land, holdings have already been allocated to designated farmers as described in section 3.3.2. Only about 40% of these holdings appear to have been taken up and access to land is not limiting – though access to land of quality with adequate infrastructure may be a serious issue. The community is “open” in the sense that households are neither nuclear nor necessarily resident. Nevertheless the issue of access by young people to land resources should be considered.

There are 299 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 3-8. 9 are already classified as HHH. Another 17 are classified as “spouses” or wives and can also be considered as established. There are 120 young males and 100 young females who may imminently marry and establish HH of their own: a potential increase in HH numbers in Musakashi in the next few years of 33% (assuming they inter-marry). This dynamic should be considered in allocating irrigated plots. A possible approach might be a “youth allocation” which is transferable on marriage, see section 8.3.4.

Figure 3-8 Young People and their Relation to HHH



3.3.4 Female-headed Households

There are 111 female-headed households reported in the census, or 32%. The Farmer Register reports land allocations having been made to 41% of women (see Table 3-1). This is an important proportion the characteristics of which should be known. Referring to Table 3-7, and in marked contrast to Lusitu group 1 site, female HHH are not demonstrably worse off than male HHH in terms of food security and size of cultivated area. The data do suggest some slight disadvantages in terms of female education. The households of female HHH tend to be slightly larger and younger.

Table 3-7 Variance of Mean HH Characteristics: Female and Male HHH

	unit	Mean		df	Fstat	sig. level
		Female	Male			
Number	no.	117	245			
Food balance	mkcals	4.5	8.8	361	1.1	n/s
HH members	no.	5.7	4.8	361	7.2	90%
Size of cultivated area	ha	1.9	2.5	361	0.84	n/s
Age of HH	years	56.0	54.0	351	0.22	n/s
Age of HHH	years	28.7	34.6	351	10	95%
Education of HH	grade	5.8	7.5	282	8.5	95%
Education of HHH	grade	6.2	6.8	327	2.2	n/s

Notes

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

Age of HH is the average age of HH members

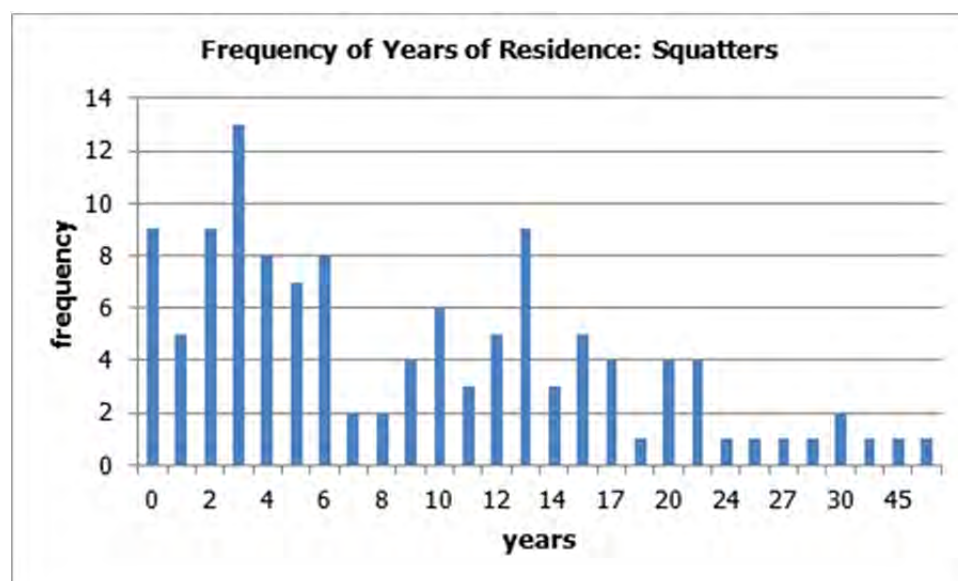
Food balance is kcal million required by HH - kcal million produced on farm

There should be no question that female-headed HH are equally eligible to an irrigation allocation as male headed HH. However, there is no evidence for the need for affirmative action in promoting women's access to irrigation over men at Musakashi.

3.3.5 Squatters

In section 3.3.2 120 households reported in the 2013 census were identified as "squatters". No family member appears to be recorded in the 2011 Farm Register and therefore, on the assumption that the register is an official document, these families have no land rights. Squatters on State land have no land rights under Zambian law and can be evicted at any time. However, their position must be considered as part of the RAP. Years of residence reported on the site by squatters are shown in Figure 3-9. "No response" (7 cases) is presumed to be zero years. Almost 40% of squatters may have arrived at Musakashi within the last four years, in other words subsequent to the announcement that Musakashi was to be developed as a block farm (see footnote 3). This opportunistic behaviour is expected given the number of farm holdings available, about 910. Some squatters may be relatives of those with title. Renting or sub-letting of the holding does not seem to be occurring (see section 3.2.4).

Figure 3-9 Years of Residence of Squatters at Musakashi



It is also worth examining if squatters have any different social characteristics compared to those with land rights. There is no significant difference in a cross tabulation of sex of household head against title, about 24% of households without title are headed by women, as against 37% of those with title. Other household characteristics are examined in Table 3-8. Some rather weak correlations exist. Squatter households are slightly smaller, younger and better educated. Squatter households also show a tendency to cultivate larger areas and have a more positive food energy balance. There is no indication to suggest squatter families are in any way disadvantaged compared with households with title – other than they have no demonstrated title to the holding they are cultivating.

Table 3-8 Variance of Mean Household Characteristics: Titled and Squatters

	unit	Mean		df	Fstat	sig. level
		Squatter	Titled			
Number	no.	120	242			
Food balance	mkcals	12.5	4.9	361	3.4	90%
HH members	no.	4.2	5.5	361	16.1	99%
Size of cultivated area	ha	3.1	1.9	361	2.6	n/s
Age of HH	years	48.0	58.0	351	8.9	95%
Age of HHH	years	30.6	33.8	351	3	n/s
Education of HH	grade	8.1	6.4	282	10.6	99%
Education of HHH	grade	7.3	6.2	327	9.6	95%
Period of Residence of HH	years	10.4	13.5	343	9.2	95%

Notes

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

Age of HH is the average age of HH members

Food balance is kcal million required by HH - kcal million produced on farm

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. At Musakashi the issue of polygamy appears unimportant compared with the Mwomboshi and Lusitu Group 1 sites on customary land. There is no impediment to women obtaining land rights on State land. Households are the basic social units that will receive irrigation allocations, compensation for fixed assets within the irrigation scheme and alternative farms 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. 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 or within the dam site 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 Mwomboshi area 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 State land are all those actively using land. They may have dispensation from the District Council, they may have leases from the Commissioner of Lands, or they may be squatters. While the Musakashi block farm has been indicatively planned (see the cadastral map) there is no

guarantee that land holders are where they should be, or they are using all their allocation. The cadastral survey collected the cadastre as planned by District Council and the main boundaries of areas opened for cultivation but it was impossible to delineate areas of micro land use over such a large area. 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 Zone Chairmen and the District Council.

This report has identified “vulnerable groups” which may need special consideration in the allocation of irrigated plots. These groups include youth and squatters. 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. At Musakashi their rights to land are protected under state law only if they have full title; see section 5.1.1. If they have a certificate of use from the District Council they have stronger claim, but the Zambian courts would not necessarily uphold that claim. Without papers at Musakashi, displaced households are squatters and can be summarily evicted. However, squatters have some protection under Zambian environmental legislation and international guidelines. The Environmental Impact Assessment Regulations (1997) give guidance (only) on the treatment of those without land rights subject to involuntary resettlement. The World Bank’s Operational Policy on Involuntary Resettlement (OP 4.12) give clear mandatory provisions on squatters.

The rights of “displaced households”, including squatters, to private property are protected under the Constitution (see section 5.1.2.2) irrespective of their tenure status.

“Project affected population (PAP)” and “affected households” refer to those within the project area that will be affected by the Musakashi 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. This includes all associated infrastructure (farm roads, reservoirs, pump stations etc. that may not be within the irrigation blocks. The development area includes the planned resettlement areas for the project. Both irrigation and resettlement areas will be controlled on behalf of the community by the Community Land Trust.

The cut-off date of the RAP is 7th September 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.

4.2 Eligibility Criteria

The Musakashi block farm is under State land tenure under the administration of MAL³, though Mufulira DC has been engaged in land use planning of the block, to the extent of allocating farm areas and drawing up an outline land use plan⁴. The responsibility for land administration has recently been clarified as being the responsibility of MAL (as described in the report IDSP Report Verification of the Land Status of Musakashi, IDSP April 2013) and this land use plan (see drawing Allocation Plan – Council: not necessarily implemented) has now been rescinded (so it is not shown in this report), though it contains elements of interest that may guide IDSP in planning the development of the area (e.g. possible location of future settlement).

It is worth remarking that very little progress has been made in locating the population on its designated farms and that the infrastructure support originally envisaged for the area will now have to be implemented under the IDSP project. Musakashi has never been developed in terms of infrastructure (though the area is bisected NNW-SSE by a ZESCO power line): access is poor and there are few public services. Also land suitability is generally poor: a semi-detailed soil survey for irrigation (Soil Survey of the Proposed Musakashi Site, IDSP April 2012) shows that 62% of the area is unsuitable due to shallow depth and coarse material in the profile: limiting factors that may apply equally to rainfed as irrigated agriculture. Note though that the survey did not cover the western part of the Musakashi area, its boundaries are available from District mapping and shown on the Cadastral Map.

The principles of entitlement and compensation for loss of assets and access to State land 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:

³ Farm blocks are areas of previously under-utilised State land identified by government in 2010 for investment in basic public infrastructure with the objective of creating an environment for establishing public-private partnerships in agro-business: a concept very similar to that espoused by IDSP.

⁴ The informal report Brief Historical Background of the Luanshimba Zone (2013, unattributed) suggests that some land users have been poorly treated in Musakashi. When Kitwe Processing Farm Number 4 operated on Farm 4287 in 1981-1996 previous land users were allowed to settle in the zone now known as Luanshimba. When Kitwe Farms left in 1998 the MMD government promised regularisation of the situation and directed that two limas should be allocated to each household. Affected households were invited to pay application fees for land rights. Most paid and received letters of acknowledgement or receipts. Then Olympic Farms was allocated part of Farm 4287 (year not specified) and as a result 144 households were re-settled in Luanshimba. The authorisation of the presence of Olympic Farms was not established. Then, between 2007 and 2010 sub-division of the block farm was carried out and allocations were made which those without title alleged were not transparent. There was some movement of those without title to the Chambishi Zambia Compound. Then in 2013 IDSP established MAL's responsibility for Farm 4287 (see IDSP Report Verification of the Land Status of Musakashi, IDSP April 2013). As a result District Council will need to revoke wrongly allocated land rights.

- (i) Individual leaseholders of proven title⁵ on State land within the blocks designated for irrigation development or otherwise losing land as a result of the Project will be compensated for loss of access to this land by:
- a. an irrigation allowance on Tier 1 land provided by the Community Land Trust⁶
 - b. or an irrigation allowance (held jointly with other cooperating farmers) on Tier 2 land (for suitably qualified farmers) provided through a Community Land Trust which will be organised in an identical way to that recommended by the Transaction Advisor for communities on customary land
 - c. and a “land for land” allocation from land outside the irrigation blocks which takes account of the allowances received in (i) a and b above, title will be provided
 - d. Monetary compensation for any land that cannot be compensated “land for land”.
- (ii) Individual users with State land without proven title (including “squatters”)⁷ within the blocks designated for irrigation development or otherwise losing land as a result of the Project will be compensated for loss of access to this land by:
- a. an irrigation allowance on Tier 1 land provided by the Community Land Trust
 - b. or an irrigation allowance (held jointly with other cooperating farmers) on Tier 2 land (for suitably qualified farmers) provided through a Community/Cooperative Trust

⁵ The Report Verification of the Land Status of Musakashi (MAL, April 2013) suggests there are none but searches in the database of the Commissioner of Lands in Ndola gave the results summarised in Table 8-1 and Appendix C. Farm 4288 is Government property under the administration of MAL. In respect of Farm 4287, the report refers to the “re-planned drawing” of Mufulira Municipal Council that recommended five applications for title to the Commissioner of Lands: the report states that these recommendations will be withdrawn.

⁶ The *modus operandi* of the Community/Cooperative Trust is briefly outlined in The Transaction Advisor’s Subject Specific Report (ii) Cooperative Societies, September 2013. This report refers primarily to formation of such societies in communities residing on customary land. IDSP prefers the Trust vehicle rather than the cooperative vehicle. It is not clear from the report if any modifications are necessary for communities on State land (particularly in block farms); logically the only modification is the removal of the prior necessity to convert customary land to State land. Assuming there is none, as a legal entity the Community Land Trust can then take a 99-year head lease on its own land. The Community Land Trust may then sub-let land, not only to community members but also to the private sector including the Tier 3 operator (FarmCo).

⁷ This category will include the vast majority of land occupiers in Musakashi. As well as squatters (those without any evidence of tenure status) there may be land users in possession of either the 14-year provisional certificate of title for land that has not been demarcated, or a 99-year certificate of title by DC or a Land Record Card by DC. None of these are valid indicators of leasehold title because the Commissioner of Lands has not processed them. Only those title holders listed in Table 8-1 can be considered to have secure title. It can be concluded that user land rights in Musakashi are much more precarious than on the customary land of Lusitu and Mwomboshi: there at least customary land users can rely on the support of the Chief’s administration to support their land rights as community members. Musakashi land users have no such support and can legally be evicted (though no doubt with political consequences).

c. and a land allocation for rainfed cultivation on the remaining land suitable for rainfed cultivation outside the irrigation blocks which takes account of the allowances received in (ii) a and b above. This land allocation for rainfed cultivation will be equitably⁸ distributed.

- (iii) Compensation for re-located housing of users of State land will be based on replacement. Houses will be constructed for those households whose dwelling places are presently within irrigation blocks or Resettlement Site. 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, costs of construction will be included in the tender documents and construction will be carried out by a Contractor. The CLT will hold the head lease of the housing plots with houses valid for 99 years and the individual entitled PAP's will be offered sub-lease in perpetuity (automatically renewable 1 year sub-lease) with very limited termination rights of the lessor and continuation of lessee rights in case of failure of CLT.
- (iv) 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 in (i)c and (ii)c above is likely to be challenging, though for those without full title (see footnote 7) not so difficult as on customary land because MAL (not the Chief's administration) is the arbiter of how much land and where block farm farmers will farm. 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 State (and customary) land, land users 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 the same block);
- 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 a smaller area if presently unused suitable land is insufficient or inaccessible);
- 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:

⁸ "Equitably" implies taking into account present landholding size and the size of the irrigated holding to be allocated in future, as well as ensuring as far as possible an equal distribution of land resources per average holding between existing zone areas.

- allocated irrigation land rights within an accessible block and an appropriate Tier;
- encouraged if necessary to give up some of their rainfed land for which they will be compensated to land users who have lost rainfed land (equivalent to their loss minus their new irrigation land rights expressed in rainfed land equivalent) inside the irrigation blocks if presently unused suitable land outside the irrigation blocks is insufficient.

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.

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 4,380 ha (the entire Musakashi area) of cadastral survey rather than 1,028 ha (the area to be irrigated). This was an unexpected requirement, 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 Musakashi site particularly it proved difficult to comply because of the incomplete and out-of-date cadastral data related farm allocations at the Block Farm.

It is timely to make another quotation from the CP&CB Inception Report:

"The allocation of irrigated holdings in Phase 1 block areas, especially where community households exceed the Phase 1 Tier 1 and Tier 2 land available must be done to according to defined rules agreed by the community and MAL.

The same caveat equally applies to the re-allocation of rainfed land outside the irrigation development area, where at all sites the accessible resource is scarce⁹. Through the preparation of this report the Consultant provides data

⁹ At Musakashi land suitability is constrained mostly by soil depth which equally constrains irrigated and rainfed cropping: in the area mapped by the Semi-detailed Soil Survey only 38% was found to

and recommendations to Government and will of course respond to any requests for modifications. Responsibility for implementation must rest with the civil authorities concerned.

4.3 Entitlement Matrix

Entitlements are described above and provide the basis of the Entitlement Matrix shown in Table 4-1. Seven categories of PAP are expected:

- Category 1a: Those without full legal title living and farming on State land inside the area designated to irrigation blocks or Resettlement Site;
- Category 2a: Those without full legal title living on State land outside the area designated to irrigation blocks or Resettlement Site but with rainfed or irrigated parcels inside;
- Category 3a: Those without full legal title living on State 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;
- Category 1b: Those with full legal title living and farming on State land inside the area designated to irrigation blocks;
- Category 2b: Those with full legal title living on State land outside the area designated to irrigation blocks but with rainfed or irrigated parcels inside;
- Category 3b: Those with full legal title living on State 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.
- Category 4: Common Property

Table 4-1 and Table 4-2 give the entitlement matrices for those without and with full legal title respectively. Those with full legal title are confined to Farm 4287 (SADA) and listed in Table 8-1. Those PAP with full legal title are given the suffix (b).

Categories 1(b), 2(b) and 3(b) "PAPs with full legal title" are composed of:
-farmers with title (99 year leases) (see section 5.3.1); and
-farmers with 14 year leases (see section 5.3.1).

Categories 1(a), 2(a) and 3(a) "PAPs without full legal title" are composed of:
-farmers who got dispensation for land use (see section 5.3.1);
-squatters (see section 3.3.5)

be suitable for irrigation, of which 60% will be irrigated under this project. The future supply of land suitable for rainfed cropping will be limited.

Table 4-1 Entitlement Matrix of PAP Without Full Legal Title to Present Holding

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
1a	State land holders without full legal title 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 3.9 ha per HH on CTL land outside irrigation plot area with a perpetual sublease ¹⁰ 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 or irrigated parcel inside irrigation blocks or Resettlement Site	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, fixed pipes, etc.) as valued by Valuations Department	Allocation of land of equal or higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks as State land through MAL ¹¹ ; and (2) allocation of 3.9 ha of rain fed land near dwelling (minus housing footprint) on CTL land outside irrigation plot area with a perpetual sublease ¹¹ with CLT; and (3) allocation of irrigation plot within Tier 1 with perpetual sublease through CLT ¹⁰	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

¹⁰ 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.

¹¹ Granted through the issuance of Letters of Acknowledgement which is the first step towards acquiring title deeds

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
2a	State land holders without full legal title presently residing outside irrigation block or Resettlement Site but with rainfed or irrigated parcels 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, fixed pipes, etc..) as valued by Valuations Department	Allocation of land of equal or higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks as State land through MAL ¹¹ (2) allocation of irrigation plot within Tier 1 with perpetual sublease through CLT ¹⁰	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
3a	State land holders without full legal title presently residing outside irrigation or Resettlement Site but having to give up part of or all of their rainfed land or irrigated parcel to those displaced in Category 1a or 2a	Loss of all or part of rainfed or irrigated parcel due to reallocation to PAP in Category 2a	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, fixed pipes, etc..) as valued by Valuations Department	Allocation of land of equal or higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks as State land through MAL ¹² ; and (2) allocation of irrigation plot within Tier 1 with perpetual sublease through CLT ¹⁰	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

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
1b	State land holders with full legal title 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 3.9 ha per HH on CTL land outside irrigation plot area with a perpetual sublease ¹² 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 or irrigated parcel inside irrigation blocks	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, fixed pipes, etc..) as valued by Valuations Department	Allocation of land of equal or higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks as State land with title provided through MAL; and (2) allocation of 3.9 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 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
2b	State land holders with full legal title presently residing outside irrigation block or Resettlement Site but with	Loss of rain fed or irrigated parcel inside irrigation blocks	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, fixed pipes, etc..) as valued by Valuations Department	Allocation of land of equal or higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks as State land with title through MAL (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 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

¹² 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
	rainfed or irrigated parcels inside						
3b	State land holders with full legal title presently residing outside irrigation or Resettlement Site but having to give up part of or all of their rainfed land or irrigated parcel to those displaced in Category 1a or 2b	Loss of all or part of rainfed or irrigated parcel due to reallocation to PAP in Category 2b	Compensation at replacement cost of any fixed assets associated with parcel (bird scaring platforms, wells, fixed pipes, etc..) as valued by Valuations Department	Allocation of land of equal or higher productive value through allocation of combination of: (1) alternative rain fed parcel outside irrigation blocks as State land with title through MAL; 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 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	Loss of all or part of grazing land inside irrigation or Resettlement Site	Equivalent grazing land				
		2 buildings and 2 Churches in Resettlement Site will have to be re-located, the Musakashi Dairy Cooperation Union and Community Shed (Block 1).	Will be replaced/rebuilt by IDSP	Allocation of new construction plot			Road access and water supply improved as part of detailed project design

No compensation for net rainfed land loss either in area or quality if an untitled household cannot be compensated in full. The argument for this is much weaker than on customary land, where all land affected by the project remains in the hands of the community and under customary law each community member has the same rights to access and use as the others. However, it will stand in Zambian Law unless a member of the affected household has full title to the land from which he/she will be displaced. That condition requires full compensation of land, which may be either financial compensation or an agreed land-for-land transfer. A secondary argument is that each community member will have access to an irrigation allocation – but there are attendant risks (implementation and operational failures) in the substitution of rainfed for irrigated land.

On State 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.

PAPs will also 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 kitchen structure (House and kitchen structure are Government rural standard design) and house plot (to which entitlement documents will be given 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 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 Musakashi 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: these can be made available at Musakashi because the land is held under State law. But first the community needs to have collective rights to the land it occupies. About one third of land holders are squatters with no rights, the majority may have some individual certification from Mufulira District Council which would not provide title in court. A very few (see Table 8-1 Summary of Tenure Status of Land in Farm 4288) have full title. To understand the complexities of this objective requires a brief summary of Zambian land law. Some consideration of land law on customary land is given for the sake of completeness.

5.1.1.2 A 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.

5.1.1.3 Land Transformation Processes

Therefore, to achieve the resettlement requirements of this project much more is intended than just moving households from an area to be developed for irrigation. The project seeks to establish rights of the whole Musakashi community to the Musakashi block farm, which is of course already State Land. The community as a whole will have full control in the eyes of the law (as a 99-year lease in their collective name as the Musakashi community). The community can then enter into contractual relationships for land development. The reverse logic is that MAL would cease to have planning and organisational rights on the Musakashi block farm.

The security of displaced households is thus very dependent on the success of this transformation process. The customary land transformation system (given for completeness and comparison) 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 transformation process is different, and of course directly relevant to the Musakashi community because they are already on State land.

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.

At Musakashi, some of this process has been undertaken (apparently in some areas more than once), but was repealed by the document Verification of the Land Status of Musakashi (MAL, April 2013) that mostly refers to Farm 4287. The process can be repeated, but three private citizens have already passed through the process. As a result three properties totalling 246 ha are under 99 year leases which will not expire until 2102. Of this area, about 190 ha in two properties falls within the proposed Block 1 scheme boundaries (affecting all three tiers, compare Property Number with the Cadastral Map) and about 40 ha falls in the area designated to Block 1 housing (see Resettlement Map).

This land, if acquired for the proposed development area, should be compensated for under Zambian Law and OP. 12.

5.1.1.4 Other Relevant Laws

Land acquisition under Zambian law (245.72 ha) will therefore be a feature of the Musakashi Irrigation Project. It is therefore relevant that under section three of the *Lands Acquisition Act Chapter 189* the President is empowered to compulsorily acquire property. Section 10 of the Act provides for compensation as consisting of such moneys as may be agreed from moneys appropriated for the purpose by Parliament. The affected PAPs have agreed to be compensated by a combination of irrigated plot and rainfed land they will receive for any loss of rainfed land.

Also relevant, particularly for the Musakashi Irrigation Scheme, is the *Agricultural Lands Act*, which provides for the establishment of the Agricultural Lands Board and for tenant farming schemes (block farms). The act empowers the Minister, by statutory notice, to declare any state land and, with the consent of the registered owner, any freehold land, and to alienate any declared land in any of the following ways:

- by state grant;
- by the lease of holdings, or;
- by any other state lease or tenancy.

The District Council is responsible for the planning process as described in section 5.1.1.3. Subsection 5 of section 21 provides that a lessee shall use his holding primarily for agricultural purposes, for purposes ancillary thereto and for the personal residence of himself and his family and necessary staff and for no other purpose. Subsection 1 of section 40 permits a tenant who obtains approval from the Agricultural Lands Board to make improvements to a holding at his own expense. Improvements that are permitted are those that are reasonably required for the management, improvement or development of the holding. Only improvements that are approved by the Agricultural Lands Board qualify for compensation. Section 43 provides that, if any dispute shall arise relating to:

- (a) The amount of any compensation, not being an ex gratia payment
- (b) Any valuation for an option to purchase a holding; and
- (c) Any valuation for a state grant.

Such dispute may be referred to arbitration under the provisions of the Arbitration Act (see below).

It is not yet clear how the proposed Community Land Trust will be accommodated in the block farm framework of Musakashi. The method of operation of the trusts has not yet been defined by IDSP.

5.1.2 Laws and Regulations Related to Valuation and Compensation

5.1.2.1 Land

Two holdings with 99-year leases totalling 245 ha will receive as compensation a combination of irrigation plot and rainfed land. The rainfed land will have the same 99-years lease statutory tenure. The land relinquished by the two affected PAPs will then be combined with the remainder of the development area and the Commissioner of Lands will prepare a 99-year lease in the Musakashi 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.

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 Musakhasi communities the opportunity to make fully informed decisions with regard to their participation in the project and the RAP was approved at Public Disclosure (see Appendix C and section 11.2).

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 Musakhasi

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 impacts on assets and land;
- 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 RFP sets forth a comparison of the similarities and gaps between Zambian law and OP 4.12 (see Appendix D) 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 4.12.¹³

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

¹³ IDSP, Resettlement Policy Framework. Final report, August 2010. Appendix 2; LEGAL FRAMEWORK: Comparison between Zambian Legislation and the World Bank's OP 4.12

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 is set up for oversight and governance and 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 starting 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.

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 decide and in place prior to the resettlement process begins.

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

- No compensation will be offered for land which is not under 99-year lease: the community will take control of all land that will be developed;
- There are only two 99-leases in the names of individuals which will have to be acquired by IDSP (see Table 8-1);
- Compensation for fixed assets will be in the form of a new house for displaced households, new houses will be built 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):

this reports estimates the total cash payment will be in the order of ZMW 1.17 million (US\$ 208,400).

Organizational procedures for delivery of compensation are closely aligned to the organizational implementation arrangements for IDSP. Resettlement and compensation are funded like any other programme activity eligible under the IDSP. According to the IDSP PAD (Report No: 58264-ZM dated February 2011) *“Total cost of the proposed project is US\$201.02 million of which US\$115.00 million equivalent will be financed by IDA Credit. A PPF of US\$1.50 million has been provided. The IDA lending instrument is a Specific Investment Loan (SIL)”*. Safeguard financing is included in the IDSP budget. Following normal practice, Government of Zambia will be responsible for compensation payments to displaced and eligible people.

5.3 Implementation Arrangements

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

1. Land Transformation component dealing with the transformation of State Land to 99-year lease to the Community Land Trust;
2. Land Consolidation component regulating the allocation of Trust Land and re-allocation of remaining State land;
3. 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 GOZ forwards through the District Council the application for leasing the land to the Commissioner of lands who issues a 99-years lease to the Musakashi Community Land Trust.

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

- Development area consisting of all irrigation blocks and land for associated infrastructure;
- Resettlement areas.

Irrigation plots in Tier 1 and housing plots in the resettlement areas will be allocated to PAPs in perpetuity through 1 year automatically renewable sub-leases with limited termination right of the lessor and continuation of lessee land rights in case of failure of CLT . This land will be under 99-year lease in the name of the Community Land Trust. To achieve this, the 99-year lease titles of two individuals and the 14-year lease titles of seven individuals will have to be withdrawn and those individuals compensated. Those land holders with dispensations for land use from the District Council will also be compensated in accordance with the Entitlement Matrix (see Section 4.3). The District Council have noted their obligation to do this on Farm 4287 (Report Verification of the Land Status of Musakashi (MAL, April 2013). MAL will apply the same processes on Farm 4288.

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 Council, Representative of the PPSC and the DLO. Technical Services branch is officially recognized by GOZ while representatives of Council 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 the completion of the transformation process three categories of land tenure can be distinguished: Community Land Trust, State Land holders without full legal title, and State Land holders with full legal title.

Community Land Trust Area

Community Land Trust area covers the (1) irrigation schemes (tier1, tier2, 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 362 households of the Musakhasi 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 8.3.4 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 8.3.4 .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 World Bank..

Resettlement Area will be under the administration of the CLT and therefore the mechanism of allocating housing plots will be reflected in 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.

State Land holders without full title

State Land Holders without full title who will lose parcels of rainfed land due to allocation of irrigated land by MAL will be allocated rainfed parcel on State

Land outside irrigation blocks. No title will be provided, size of parcel and land quality will be assigned by MAL.

At present, State Land holders without full title at Musakashi have less right to land than those on customary land at Mwomboshi and Lusitu. Those with papers issued by the District Council do not have full legal title. Those without papers are squatters and can be evicted without discussion. The formation of the Community Land Trust will allow all land holders to regularise their position, so long as they are registered as members of the community. The 99-year lease will be in the name of the community. The community, through the Community Land Trust, will then administer the land on behalf of its members.

State Land holders with full title

State Land holders with full title who will lose rainfed parcels will be allocated rainfed parcels outside irrigation blocks. Title will be provided and size of parcel and land quality will be assigned by MAL.

5.3.3 Resettlement of PAPs Component

The Resettlement of PAPs Component will be implemented under the supervision of NC-IDSP. About 115 households will be moved from inside the development area of the irrigation scheme and re-located in resettlement areas situated with reasonable access to the development area. The households whose fixed assets are over the value of the house will be paid cash as in Appendix B. They will be compensated for loss of fixed asset with a low cost rural house. New houses will be built by contractors engaged by IDSP. The resettlement areas will be divided into lots with an average size of about 3.9 ha on which the house will be sited. CLT as administer of the Resettlement Area will assume the task of issuing Registration Certificates. The 3.9 ha will be used for rainfed cultivation and other land use. The large size of plot (plus an irrigation allocation, see 5.3.2) will compensate for the loss of the small amount of rainfed cultivation taking place within the development area at present.

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;
- Preparation and administration of Entitlement Cards which will be needed to document agreements and payments;
- 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 Musakashi the 20-month construction schedule eases the organisation of resettlement. Assistance in the form of food, temporary accommodation, medical assistance, employment referrals or priority employment in project activities may be necessary, in particular during the interim period prior to the irrigation scheme becoming operational. This will require close monitoring. Displaced people are moving no more than a few kilometres.

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 Town Clerk's representative, MAL (as land holder and occupying the position analogous to the Chief on customary land) and functionaries from the and 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 assume monitoring responsibilities with technical support from World Bank Technical Review Missions. 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. The results would be disclosed, but not in a timely way to address difficulties in implementation.

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 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.

The District Council with the support of Zone Chairmen will ensure sufficient rainfed land allocations for all Musakashi households during the construction period, expected to last for 20 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	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			
	Procedures of Land Acquisition Act Land Commissioners records of titled land (Musakashii only)	Obtain and be conversant with the procedures of the Land Acquisition Act	Land titled to individuals within scheme changes to Community Land Trust	Land for development free of encumberment	Construction can proceed
		Plan the land acquisition process of titled land			
		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	Unresolved grievances referred to IDSP/MAL	Changes to implementation procedures adopted by RCC/IDSP if necessary	Refinement of implementation procedures
		Investigate grievance and make recommendations for resolution	Changes in implementation procedures if grievance issues warrant it	Hardship cases identified and recorded	
		Ensure grievance paperwork is completed			
		Refer unsolved grievances to IDSP/MAL			
		Advise RCC/IDSP/MAL of procedural changes if necessary			
Village headmen	Summarised baseline data from CP&CB	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
	House allocation lists from RCC	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

All asset holders living in residential structures within irrigation blocks will need relocating (PAP Category 1a and b, see Table 4-1 and Table 4-2 and the list of asset holders in Appendix B: Compensation Matrix). Valuations Department were given the list of households by name of household head which had been located within irrigation blocks shown on the present settlement map, but even with this information the asset holders could not be completely identified because:

- 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 may have more than one house: Valuations Department valued each house held by an occupier; In case of polygamous households will receive multiple houses as relevant;
- only 54% of asset holders interviewed by Valuations Department appeared as household heads reported in the Census (though they may appear as household members).

Appendix B: Compensation Matrix shows the individual asset holders concerned, their household number and individual number in the census (where they could be identified: four are public buildings and 11 individuals were not in the census, these are highlighted in red) and the irrigation block in which they are located. Asset holders highlighted in yellow (15) may be just outside the boundary of the scheme. 11 asset holders have an uncertain valuation status {4 (grey highlight) were valued by the PPSC, 1 (purple highlight) disputes the valuation by Valuation Department, 4 (brown highlight) have a different valuation on their household record card, 2 (orange highlight) claim they have not yet been valued but appear on Valuation Department's list} and 4 (blue highlight) have not yet been valued.

The compensation arrangement is that each household (not asset holder) affected is compensated with one low cost rural house. In Musakashi, out of 116 locations where fixed assets were valued, it appears that nine asset holders are members of a household whose household head, or another member of the household, will be compensated with a house. It is assumed that these asset holders will be compensated for the value of the assets lost, but they will not receive another house. Unidentified asset holders are all assumed to be household heads. There are four public buildings that will be compensated at their value. 115 new houses for identified asset holder/households will be required for compensation.

There is also the issue of the way compensation will be paid. The Principle of Compensation (see RPF) suggests that the sum awarded 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. IDSP however, have indicated that a low cost rural house will be provided to valid claimants.

Low cost rural housing is estimated to cost about ZMW 45,000 – 55,000 per unit (the higher value has been used for budgeting purposes). 23 asset holders have assets exceeding ZMW 55,000 and the value of assets that exceed KMW 55,000 total KMW 1.23 million. These asset holders will be given the difference between the built house and the current value of their property.

The Musakashi community prefers that new housing will be dispersed rather than concentrated in one settlement. They have identified areas for new housing, shown on the Musakashi Resettlement Area Map, which total 407 ha. 115 houses will be built in these areas, and the average plot size will be 3.9 ha (3 ha is the modal farm area reported in the 2011 Farm Register). The house plot will therefore provide an adequate rainfed cultivation resource, to which should be added the irrigation allowance.

6.1.2 Arable Land

The Cadastral Map shows and Appendix B3 gives area and occupancy data on 100 demarcated farms totalling 3,687 ha in the Musakashi Block Farm. Cross referencing with Table 8-1, 839 ha is under 14-year lease and 288 ha is under 99-year lease registered on the Commissioner of Lands' database¹⁴. Of this area, only 695 ha (19%) and 35 farms are within the IDSP development area, of which 265 ha in parts of seven farms are under 14-year lease and 188 ha in parts of two farms are under 99-year lease. Lease holders of these properties are entitled to land for land compensation, but note that the 14-year lease with the longest time to run expires as soon as 2020.

The names of households living within the demarcated farms have been collected; there are 73 named famers in farms within the development area. These households will be displaced and compensated for fixed assets, but only named lease holders have title (see Table 8-1) and are entitled to "land for land" compensation for 188 ha within the proposed developed area.

¹⁴ Excluding Farms 9911 and 10390 (outside the development area) which are not located in Appendix B3

Land reorganisation of the rainfed area inside the irrigation blocks can be done within the area outside the irrigation blocks. 115 households living within the blocks at present will be relocated to resettlement areas totalling 407 ha, the area of each house and farm together will comprise 3.9 ha. The District Council will allocate the balance of land ($445-407=38$ ha) in another location in Musakashi that has not yet been determined.

The land allocated (see section 8.3.4) will need to be cleared and reinstated to a similar condition to the land lost: the maximum that will be required is equal to the land taken up by the irrigation blocks (1,054 ha) but in fact the present cultivated area at the whole site is only about 800 ha (see Table 3-4) of which a maximum of half is inside the blocks: say 350 ha. As described, this will be relocated to the resettlement blocks (407 ha) and an area to accommodate 35 farmers who farm but do not live in the development area: at 3.9 ha per household this will amount to 122 ha. The cost of land clearing (of rainfed land outside the irrigation blocks) is estimated to be about US\$ 600 per ha: the land is in heavy woodland and will require major stumping and levelling of termitaria.

6.1.3 Common Property

Two churches will have to be re-located, the UCZ (Block 6) and the New Apostolic Church (Block 2). The church buildings were valued at ZMW 23,250. These will have to be re-located and either replaced or the value of the building paid to the congregation to construct new churches elsewhere. The cost of churches is included in the estimate of the cost of monetary compensation described above.

Two other buildings will have to be re-located, the Musakashi Dairy Cooperation Union and Community Shed (Block 1). The buildings were valued at ZMW 18,040. These will have to be re-located and either replaced or the value of the building paid to the community to construct new buildings elsewhere. The cost of churches is included in the estimate of the cost of monetary compensation described above.

Customary users of commons land (grazing, fuel wood, forest products etc.) permanently taken up by project infrastructure or to accommodate resettlement will be compensated¹⁵ 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;

¹⁵ Users of common land may include graziers and other users from outside the communities in the project area if community members acknowledge use.

- 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;
- Schools and health centres: no schools nor health centres exist in the project area so re-location is not an issue. Related to this context the ESIA states that the IDSP will endeavour to provide social services as it would be imprudent to build an irrigation scheme without planning and constructing the social services that is required to support it.¹⁶ Responsibility for an adequate service in the future will be with the Mufulira Municipal Council;
- Potable water needs to be supplied to the resettlement areas that will be provided as part of the housing contract and as part of this RAP. There will be one borehole for each 20HH. A reticulated water supply system may be considered during/after project implementation.

The lack of potable water (together with lack of road access) has always been an issue in the development of the Musakashi block farm. Settlers have often not been able to access their allocated farms because of lack of infrastructure development. The arrangements for potable water supply with the IDSP project are not yet clear. Potable water supply will not be supplied as part of the irrigation design. Access to groundwater requires test drilling that has not yet been done: this groundwater exploration is not part of the terms of reference of this RAP. The ESIA mentions a perched groundwater table that is sensitive to contamination and will probably not be a sustainable source of supply due to possible contamination and limited extent. It is most likely that water will have to be pumped from the Kafue, purified and distributed through a pipe system.

A budget for water supply has been included in the RAP budget, see section 13. This budget is adequate to cover the costs of development of groundwater by boreholes accessed by hand pumps, or in the event that the use of groundwater is unsustainable, by piped distribution from the Kafue River.

6.2 The Resettlement Areas

6.2.1 Selection of Location

The Resettlement Map shows the agreed location of resettlement areas at Musakashi. The stakeholders agreed to the resettlement areas after the extensive analysis of the alternatives justifying the project design described in detail in the project ESIA Report. The objectives of the resettlement at Musakashi are outlined below.

The following were the project stakeholders agreed criteria for selecting the resettlement areas:

- Land suitability for rain fed agriculture and housing development;
- Proximity to the Tiers especially 1 and 2;
- Land availability for resettlement;

¹⁶ See ESIA section 6.4.4.2 Social Services

- Proximity to existing settlement and;
- Easy access to existing and/or planned facilities and services like safe water supplies, schools, health centres etc.;
- Acceptability of the resettlement areas by the PAPS and other stakeholders;
- Quick land availability for the project activities implementation within the stipulated rules and regulations.

In respect of land suitability, the IDSP soil survey (Semi-detailed Soil Survey (Hungwe, 2012) provides much more information than was formally available to the Mufulira Municipality for planning at Musakashi than was available before. The soil survey, while it had the objective of identifying land suitable for irrigation, identified large areas of Musakashi that were unsuitable for irrigation development because of shallow depth or coarse material in the profile. Such limitations may also apply to rainfed agriculture. The Resettlement Map also shows land suitability classes. Every effort was made to site resettlement areas on soil mapping units that have marginal suitability for irrigation.

The Resettlement Plans have been processed for onward transmission to the Commissioner of Lands for reservation of the sites and IDSP assigned contractors to start with the construction of the houses in November 2015.

6.2.2 Internal Layout and Design

6.2.2.1 Resettlement Plots

Table 6-1 shows the Musakashi Resettlement Areas, their location, hectareage, number of households for resettlement and size of the housing plots.

Table 6-1 Resettlement Areas

Areas	Location	Area, ha	Number of households to be resettled	Size of the housing plot
A	South	341.6		
B	Center	54.98		
C	North-West	48.49		
	Total	445	115	3.9

The housing plots are similar in size to the modal allocations for farm holdings made by Mufulira Municipality when the block farm was set out.

6.2.2.2 House Design

The diagram at Appendix D shows the low cost four (4) roomed house which the Government will build for each beneficiary in the agreed resettlement areas at Musakashi. Consultations with the affected households and local authorities were held and agreement reached on the matter (see Minutes of Public Disclosure Meeting held at Musakashi on 16th 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 resulting from their resettlement.

The houses will be built on individual plots of 3.9 ha as shown on the layout plan. 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

The resettlement and irrigation development areas at Musakashi are already on state lands. According to the current land status at Musakashi, the Commissioner of Lands will issue a 99-year lease for the land needed by the project to the Musakashi community. A Community Land Trust will be set up for this purpose, which will manage the lease for the benefit of the community. 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 Demarcation

The first step in the development of the resettlement areas at Musakashi is to have the site plans prepared, which has already been done. These have been submitted to the Mufulira Municipality for endorsement and onward transmission to the Commissioner of Lands to have the agreed resettlement areas reserved for the project. Once the sites have been approved and the resettlement land reserved for the project, a licenced surveyor could be engaged to survey both the agreed resettlement area boundaries as well as the approved layout plans of individual house plots within. The survey of the resettlement areas and the plots within them will include their demarcation and placement of concrete beacons fixed in the boundary corners.

6.4.2 Housing Construction Contracts

As the number of houses to be constructed by the Government at each resettlement area in Musakashi and the beneficiaries have already been identified and notified, the Government (MAL) is to follow the well-established process of advertising the schemes and call for contractors to bid for the construction of the houses which the Government has already grouped in lots as per the Zambian Procurement Authority regulations.

6.4.3 Allocation of Plots

As the number of plots to be built in each resettlement area has been determined and the beneficiaries notified, the CLT and the Resettlement Compensation Committee are now putting final touches to a mechanism for the allocation of the plots taking into account local customs and traditions.

CLT and Mufulira Municipal Council will develop an allocation mechanism for the allocation of rain fed land in accordance with this RAP in case not sufficient land is identified.

6.4.4 Development Costs

The development costs to be incurred in the development of the resettlement areas at Musakashi include the following:

- Surveying costs for the demarcation of the resettlement area boundaries and individual plots within them. The Government can minimise these costs by utilising the services of the MAL's Land Husbandry Division, Surveying Team and have their surveying work verified by a licensed land surveyor from the Government Surveying Department;
- Housing construction costs.

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. Housing construction should involve, to the extent practicable, local labor and materials.

Costs will be incurred by providing services such as portable water, feeder roads, electricity, education and health facilities to the resettlement areas. While roads and power are designed as part of the IDSP irrigation project, there is a notable lack of planning for potable water, education and health. The costs of providing these services cannot be met by the IDSP project alone. The need to solicit and harness the opportunities that might be offered by other programs, projects and funds such as the Constituency Development Fund (CDF), Rural Electricity Authority's local initiatives, women for change, Oxfam, UNICEF, Rural Water and Sanitation Programs etc. But the responsibility for providing these services according to District norms rests with the Mufulira Municipality.

6.4.5 Socio-Environmental Impacts

6.4.5.1 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.

6.4.5.2 Impact of the Host Population

There will be no material changes in the relationship of the displaced and relocated population with the host population. No households will be required to move from the area of origin. Those households in the west of Musakashi will not be displaced by the proposed project and would have to move (or not) at their own expense to access irrigation in Tiers 1 and 2. Numbers of households in each locality will therefore remain the same. However, social relationships in Musakashi 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.

6.4.5.3 Fuel wood 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 three kilometres from their point of origin and displaced households will normally remain in the same zone area. There will therefore be no incremental impact on the demand for fuel, grazing and other natural resources. The Musakashi Irrigation Project itself will have an impact on fuel and grazing resources because large areas of Musakashi will be irrigated. This impact is discussed in the ESIA report. It is sufficient to note there will be a considerable increase in crop residues that will counter-balance to some extent the removal of woody biomass and reduced access to natural grazing. The number of livestock in the Musakashi area is negligibly small at present, though it may increase with irrigation in the future.

6.4.5.4 Public Health

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 over 3 ha, the new settlement will be sufficiently dispersed for such a risk not to be significant, especially with attention to drainage, sanitation and (if necessary) solid waste disposal.

6.4.5.5 Income Restoration

Income restoration activities will be the increased opportunities for improved livelihood activities offered by the Musakashi 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 report.

7 CONSIDERATION OF ALTERNATIVES

7.1 Resettlement Design

Planning the location of irrigation development at Musakashi between the Engineering Feasibility Study Consultant and CP&CB Provider has continued since January 2013 and developed through the following stages:

- Initial consideration of a development area of about 150 ha of Tier 1 and 350 ha of Tier 3 confined to Farm 4288 (SADA) to be followed by two later phases of construction: this idea was rejected by IDSP because the Tier 3 area was insufficient to attract an investor;
- Later consideration of the development of Musakashi in one phase of three blocks of suitable land of 500 ha in Block 1 (Farm 4288), 700 ha in Block 2 (Farm 4287) and 150 ha in the fragmented Block 3 on the border of the two farms in the east of Musakashi: this outline design was later adopted with modifications.

The over-riding considerations in the location of irrigation blocks were the location of suitable land for irrigation (only 38% of Musakashi is considered suitable mainly due to limitations of soil depth and coarse material) and the IDSP instruction that the irrigation area of Tier 3 should be as large as possible to attract private investors. In this context it was difficult to make recommendations to minimise re-settlement impacts, particularly as there was great controversy as to the number and locations of households. On the one hand and as shown in the Block Farm Register some 910 farms had been allocated accounting for nearly all of Farm 4287 and about 70% of Farm 4288. On the other hand from the ground the population appeared much lower than expected and widely dispersed with only small and fragmented areas under cultivation, an impression that was reinforced by inspection of satellite imagery. Only detailed fieldwork resolved the issue (see for example Table 3-2). It was not possible to carry out this fieldwork until August 2013 by which time the engineering design had been finalised.

Nevertheless, the Engineering Consultant was able to locate 312 ha of Tier 3 in the north of the scheme on Farm 4287 which clearly has a low population density at present (see Cadastral Map). The balance of Tier 3 had to be located on suitable land on Farm 4288: a minimum total of 700 ha of Tier 3 were required so this area was fixed at 416 ha¹⁷. Tier 1 and 2 were located close to existing loose clusters of population in the north of Farm 4287 and the east of Farm 4288. The correspondence between irrigation layout and population distribution is therefore generally good, but with one notable but unavoidable failing. About 50% of the Musakashi households are located in the west where no irrigation is planned: they are about 8-12 km away from the planned locations of Tier 1 and 2. It is unlikely there is suitable land in the western area (there is in any event no good water source), though this cannot be verified, as the Semi-detailed Soil Survey does not even extend to this area.

There are two other resettlement issues at Musakashi that have not yet been fully explored. The first is an extension into Musakashi of the Olympic Farm operation into the NE of the area occurred in 2012 (and, apparently in several preceding years). This was apparently authorised by Mufulira District Council and resulted in the movement of a number of smallholder farms. About 100 ha of maize was grown by Olympic within the Musakashi area (NW of Farm 4287) in 2013. The District Council has assured IDSP that the authorisation was only temporary. However it can be observed that Olympic Farms have been involved with the Musakashi site (particularly Farm 4287) since about 2005 (see footnote 4). The occupation of land by Olympic Farm has affected the size of Tier 3 area in terms of the number of centre pivots. IDSP is in the process of relocating the centre pivots elsewhere from this portion of land but within the project area with due care not to affect the RAP and the resettlement process in Musakashi.

The second issue is that in September 2013 NFC Africa Mining, responsible for the tailings dam on the Musakashi Stream just upstream of the Mwomboshi site, applied for an additional 700 ha land for another tailings dam downstream and inside Musakashi. According to verbal communications, MAL and Mufulira District Council agreed to a smaller tailings dam affecting an area of about 300 ha. The area would be well away from the proposed irrigation scheme and its water source (from the Kafue River, the Musakashi Stream joins the Kafue downstream from the locations proposed for the Musakashi pump stations) but may result in the displacement of households living in the area – and may encourage others to leave and move east. It is clearly a consideration that those affected households could be re-located on the IDSP project, but the RAP arrangements, implementation and costs of this relocation should be attributed to NFC Africa Mining, not IDSP.

7.2 Consultation Procedures

CP&CB Provider made several visits to the IDSP Musakashi site for the purpose of RAP strategic planning. The initial discussions (based on Strategic

¹⁷ One Tier 3 centre pivot was moved from the South Block to the North for design reasons

Options for Resettlement Planning at Musakashi Group 1 Site, CP&CB 1st February 2013) though well-received, proved abortive as it was subsequently decided by IDSP to develop all land suitable for irrigation rather than stage investment into three phases. Since at best only 1,670 ha or 38% of the Musakashi site was classified as suitable or marginally suitable for irrigation by the Semi-detailed Soil Survey (Hungwe, 2012), and the Transaction Advisor suggested a minimum size of 800 ha for a Tier 3 operation at Musakashi, this was a sensible decision. Based on this, a second round of discussions was held with the Musakashi community in March 2013 that recommended:

- Maintaining all of Tier 1 (190 ha) and Tier 2 (90 ha) in Block 1;
- Develop the rest of Block 1 to Tier 3 (up to 230 ha, though fragmented);
- Locate the main part of Tier 3 in Block 2 (at least 500 ha).

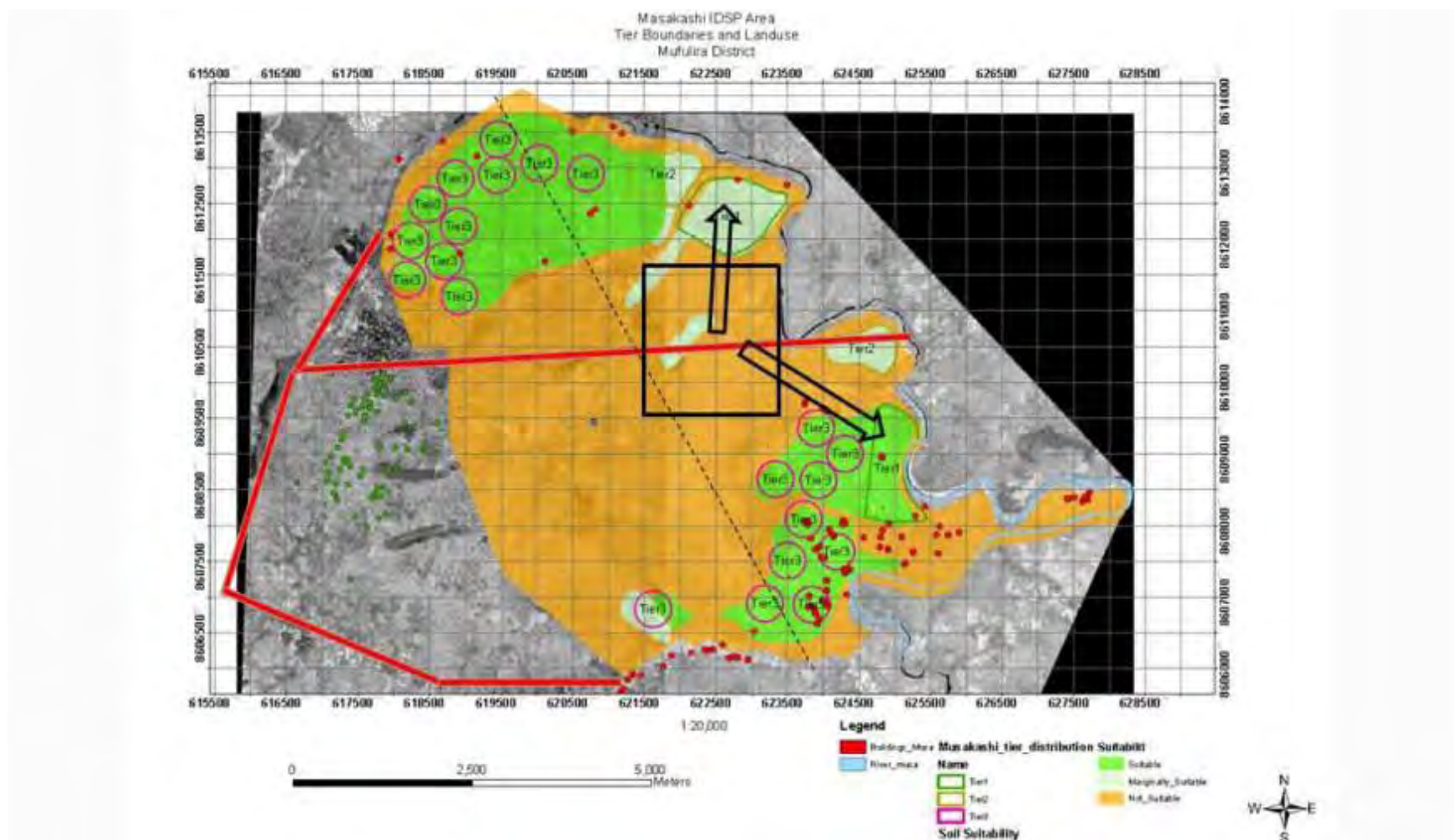
The reasoning for this was:

- Inferring from the Soils Report, land quality is best in Block 1, intermediate in Block 2 and inferior in Block 3;
- Apparently most of the population was settled in association with Block 1 (at that time the large numbers of households in the west was only suspected, because the soil map and other IDSP maps did not cover the west);
- Tiers 1 and 2 should be together, and near the majority of the present Musakashi settlement;
- This settlement needs to be consolidated to provide services and allow land consolidation;
- Resettlement requirements in Block 2 are lighter than Block 1.

The comments from the community on these recommendations were confined to the importance of speedy implementation of a project, which they believe will uplift their standards of living through the provision of food security, and needed development services. Concern was also expressed at the long delays in the issuance of title deeds and the formalization of squatters' rights on the scheme. The community also emphasised the importance of the provision of infrastructure in the area as part of the resettlement package.

The CP&CB recommendations were adopted in part by the Engineering Feasibility Study team. The revised design was provided to CP&CB Provider on 1st June 2013. This enabled an outline strategy to be developed as shown in Figure 7-1. This was discussed during the IDSP Coordination Meeting on 21st August 2013. Note that the boundaries of Farm 4288 (obtained from District Council mapping) exceed the area of soil mapping and a large number of households are located within this area (this includes Luanshimba zone which has often been disadvantaged, see footnote 4). Clearly a central settlement to access Tier 1 and 2 areas would be appropriate: this idea has already been suggested by Mufulira DC but has not found favour by Musakashi residents. Residents prefer dispersed settlement; with the house plot situated in a sizable area for rainfed cultivation and other land use. Their requirements have been acknowledged; see the Musakashi Resettlement Maps.

Figure 7-1 Resettlement Strategy for Musakashi – Designed irrigation blocks



7.2.1 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. The value of fixed assets within the blocks totalled ZMW 2.6 million (US\$ 468,600) in current prices, or an average of ZMW 22,790 (US\$ 4,143) per asset holder. The maximum value of assets of one asset holder was estimated as ZMW 680,600 (US\$ 123,745) (mostly accounted for by a large banana plantation) and the minimum was ZMW 720 (US\$ 131). There is thus a substantial variation in the value of assets held between asset holders: see Table 8-2 for the value of assets by asset holder and irrigation block.

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 Musakashi). This can encourage fraud and theft, both before and after payment. There is the real prospect that the payment is not directed to the purpose it is intended, which is the re-construction of assets at the re-settlement site. 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 be 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 Musakashi 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 115 houses) ZMW 6.33 million (US\$ 1.13 million). The total value of affected assets at Musakashi is estimated to be ZMW 2.58 million; this suggests a generous compensation. In addition, about ten households have assets exceeding the

value of a new house, sometimes substantially (usually because their assets include perennial trees). This amounts to about ZMW 1.17 million. Cash compensation will be provided to nine asset holders in households with more than one per household. This amounts to ZMW 53,120. Poorer households will gain more than wealthier because the value of present assets is variable. However, if economic trees are compensated explicitly and in full, only one asset holder who has other assets valued at greater than the value of a new house, would have to be compensated in cash for the balance of his asset value against the value of a new house.

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 apart from a Tier 1 allocation.. 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.

There is a final and important point to consider in the location and number of new housing units. At present Musakashi is not settled like a block farm: households are scattered over the area where present access and water supply permit. A consolidated settlement would be preferable (as described in section 8.3.4) to accommodate all households with irrigation allocations in a central place, including those in the west who wished to take up irrigation under the project. This would require 200 - 340 new houses, depending on the proportion of households that moved from the west and Musakashi non-residents that may return to site. In fact these western households will not be subject to involuntary displacement: they are outside the irrigation tiers and will not be moved and it is unlikely they would be asked to give up some of their farm area to households cultivating rainfed land inside the blocks (the location would be too far). Therefore households in the west are not eligible for compensation.

7.2.2 Compensation for Land

The Cadastral Map identifies the areas of land in farms within the area intended for irrigation blocks. 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 (greatly 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, with the exception of two land users with full title and seven land users with 14-year leases (who will have to be compensated), land users at Musakashi have less right to land than those on customary land at Mwomboshi

and Lusitu. Those with papers issued by the District Council do not have full legal title. Those without papers are squatters and can be evicted without discussion. The formation of the Community Land Trust will allow all land holders to regularise their position, so long as they are registered as members of the community. The 99-year lease will be in the name of the community. The community, through the Community Land Trust, will then administer the land on behalf of 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.

The PPSC and communities concerned have decided the locations of new housing and the resettlement areas. They are shown on the Musakashi Resettlement Map, which is attached to this report. The average size of house plot over all the settlement areas will be about 3.9 ha. This compares reasonably favourably with the modal size of holdings allocated by the District Council, as shown in the Farm Register (see section 3.2.1).

7.2.3 Land Title

The land in the development and resettlement land will be under 99-year lease in the name of the Community Land Trust. To achieve this, the 99-year lease of two individuals and the 14-year lease of seven individuals will have to be withdrawn and those individuals compensated. The third individual with a 99-year lease (plot 9908) is outside the development and resettlement areas and need not be acquired. Those land holders with dispensations for land use from the District Council (the 14-year provisional certificate of title for land that has not been demarcated, or a 99-year certificate of title by DC or a Land Record Card by DC) will be rescinded without compensation. The District Council have noted their obligation to do this on Farm 4287 (Report Verification of the Land Status of Musakashi (MAL, April 2013). MAL will apply the same processes on Farm 4288.

8 COMPENSATION AND REHABILITATION ASSISTANCE

8.1 The 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. There are about 160 households (44% of the households enumerated in Musakashi) living in proximity to the proposed development area. About 115 households will be moved from inside the development area of the irrigation scheme and re-located in resettlement areas situated with reasonable access to the development area. They will be compensated for loss of fixed asset with a low cost rural house. The resettlement areas will be divided into lots with an average size of about 3.9 ha on which the house will be sited. The 3.9 ha will be used for rainfed cultivation and other land use. The large size of plot (plus an irrigation allocation, see below) will compensate for the loss of the small amount of rainfed cultivation taking place within the development area at present.

The remaining Musakashi households, adjacent to the development area and on the western extremity of Musakashi will not have to be relocated. It is not the intention of this RAP to change their access of these households to cultivable land outside the development and resettlement areas: such regularisation will be the responsibility of Mufulira District Council.

All households in Musakashi will be entitled to an irrigation allocation on Tier 1 land within the development area. Some may qualify as Tier 2 farmers. However, about 55% of Musakashi households enumerated in the census live in the west of Musakashi, up to 12 kilometres from the irrigation scheme. As Musakashi residents they are entitled to an irrigation allocation but may live too far away to give an allocation the daily attention that an irrigation allocation requires. These households are not affected by the scheme. They may choose to relocate to the east of the scheme to access their allocation but they will not

be compensated for their movement. In addition, a further 155 households have been identified by the PPSC as not ordinarily resident in Musakashi (see Appendix A2: Additional Households Identified by PPSC). These households may also have some claim to irrigation allocations, but they will not be entitled to compensation if they choose to relocate themselves to access irrigation.

8.2 The Present Distribution and Ownership of Assets

8.2.1 Cadastral and Land Use Mapping

The Cadastral Map is attached to this report in Section 4. 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 Appendix B3. A total of 3,686 ha in 100 farms is identified, of which 695 ha in 35 farms are located within irrigation blocks and resettlement area boundaries. The map shows farm boundaries taken from Mufulira District Council Map: Allocation Plan – Council: not necessarily implemented. There is little coincidence between house locations and farm boundaries: landholders do not necessarily occupy the farms they were allocated. Maps showing present settlement and affected households (in red) and unaffected households (in black) are distinguished. For clarity, separate maps have been produced showing the northern and southern blocks. The present distribution of settlement can be seen from the overall pattern but note that some of the eastern area of Musakashi is not shown on the Present Settlement maps. A Land Use map is also provided showing vegetation types.

8.2.2 Cadastral Land Rights

Farm 4288 (SADA)

The State Land of Farm 4288 has been exposed to various land claims, which were checked with the Lands Commission, Ndola. A history of land transactions for each affected area is given in APPENDIX C: History of Land Transactions in Farm 4288 (SADA).

A summary of the present tenure status of the properties officially recorded as under title is given in Table 8-1. About 1,325 ha of Farm 4288 are under title. 707 ha are under short leases that will all expire on or before 29th July 2018. Only about 52 ha of land under 14 year lease falls within the irrigation scheme and will be compensated in accordance with the Entitlement Matrix (See Section 4.3)

Three properties totalling 246 ha are under 99 year leases that will not expire until 2102. Of this area, about 190 ha in two properties falls within the proposed Block 1 scheme boundaries (compare Property Number with the Cadastral Map) and about 40 ha falls in the area designated to Block 1 housing (see Resettlement Area Map). This land should be compensated for under Zambian Law.

Leaseholders with titles verbally made their land individually and voluntarily available for the IDSP project during the pre-feasibility phase of the Project to take the Musakashi site forward for development. This agreement has been acknowledged and respected by all parties since inception to date without any conditions as the principle basis for the establishment of the proposed public funded community owned smallholder irrigation scheme in Musakashi. The PAPs expect, in return, to receive more valuable and serviced irrigation plots in Tiers 1 and 2 ranging from 1ha to 10ha depending on each PAPs individual capacity to farm. The Ministry is committed to formalize this arrangement with the PAPs through a signed agreement and/or endorsement of the aforesaid before resettling commences in Musakashi. It is expected that the formal transfer of title from the private land to the State will occur no later than April 2017. This is three (3) months after registration of CLT which is envisaged to take place by the end of December 2016.

In addition to land readily available to the PAPs and all the other target beneficiaries in Tiers 1 and 2, rain-fed land will also be available to the PAPs as confirmed to the World Bank by the IDSP in the letter of "Confirmation of Availability of Land for Compensation and Resettlement under the IDSP" dated 21st September, 2016

Table 8-1 Summary of Tenure Status of Land in Farm 4288

Title Holder	Lease period	Nature of document	Certificate of title number	Property number	Area (ha)	Lease ends	Area in Irrigation Block 1 (ha)	Area in Block 1 House Plots (ha)	Compensation (ha)
Inambao Nathaniel Nawa	14 Year lease	Certificate of Title	32540	F/9894	77.00	29 July 2018	0.00	0.00	0.00
Vincent Mubanga	14 Year lease	Certificate of Title	4938	F/9895	117.00	28 November 2015	0.00	26.70	26.70
Zimba Mwila Besa	14 Year lease	Certificate of Title	53248	F/9896	115.00	29 July 2018	2.00	66.75	68.75
Nyenda Sunford	99 Year Lease	Certificate of Title	164807	F/9899	98.57	08 August 2110	98.57	0.00	98.57
Sikapoko Stephen	14 Year Lease	Certificate of Title	35248	F/9897	110.00	29 July 2018	12.00	53.40	65.40
Kampamba Liness	14 Year Lease	Certificate of Title	86292	F/9911	100.00	29 July 2018	0.00	0.00	0.00
Hikeembe Lydia	99 Year Lease	Certificate of Title	164686	F/9902	147.15	08 August 2110	147.15	40.05	187.20
Banda Moses	14 Year lease	Certificate of Title	48694	F/10390	166.00	28 August 2020	0.00	0.00	0.00
Hanzooma Peter Hanli	14 Year lease	Certificate of Title	20465	F/9903	106.00	28 July 2017	8.00	53.40	61.40
Nthani Janet	14 Year lease	Certificate of Title	59714	F/9904	82.00	29 July 2018	30.00	0.00	30.00
Sichone Millan	99 Year Lease	Certificate of Title	20448	F/9908	206.00	08 July 2102	0.00	0.00	0.00
Total					1,324.71		297.72	240.30	538.02
Short lease					707.00		52.00	200.25	252.25
Long lease					451.71		245.72	40.05	285.77

Source: Commissioner of Lands, Ndola, Land Register, 15th April 2014

Areas in blocks and resettlement areas are approximate: see Appendix B3 for accurate GIS measurements

8.2.3 The Valuation of Fixed Assets Eligible for Compensation

8.2.3.1 Methodology

All measurements were taken in accordance with the Royal Institute 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 Institute 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 Musakashi (important when considering the effect of inflation) is 22nd October 2013. Assets values will be indexed for inflation and additional HHs will be considered in line with recommendations of RCC and CLT. A second round of Valuations is inevitable before the RAP is implemented: all assets not valued in the first round will be assessed then.

8.2.3.2 Results

Valuations Department visited 117 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 2.6 million (US\$ 468,600) in current prices, or an average of ZMW 22,790 (US\$ 4,143) per asset holder. The maximum value of assets of one asset holder was estimated as ZMW 680,600 (US\$ 123,745) and the minimum was ZMW 720 (US\$ 131). There is thus a substantial variation in the assets held between asset holders: see Appendix B for the value of assets by asset holder and block. The breakdown of assets by block can be summarised easily and is shown in Table 8-2.

Table 8-2 Value of Fixed Assets in Irrigation Blocks

Irrigation Block	Number of asset holders	Total value of assets, Kwacha	Total value of assets, US\$
Block 1	4	149,247	27,136
Block 2	33	1,293,419	235,167
Block 3	37	555,110	100,929
Block 4	20	226,160	41,120
Block 5	8	160,230	29,133
Block 6	11	191,130	34,751
Total	113	2,575,296	468,236

NB "Blocks" refer to Tier 1, 2 and 3 land in Blocks 1 and 2

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 8-3. Specific 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 will not lose assets of real value/sources of livelihood they are not able to move.

Table 8-3 Estimate of Value of Fixed Assets of Musakashi Category 1 Households, ZMW

	Housing	Sanitation	Shelter	Commercial etc.	Animal enclosures	Storage	Water control	Milling	Economic Trees	Total
Block 1	76,105.00	1,100.00	3,312.00	-	2,820.00	7,210.00	600.00	-	58,100.00	149,247.00
Block 2	259,334.00	9,640.00	23,525.00	6,620.00	14,060.00	21,750.00	5,700.00	7,200.00	952,030.00	1,299,859.00
Block 3	262,150.00	3,930.00	6,930.00	1,800.00	14,160.00	9,690.00	25,600.00	-	230,850.00	555,110.00
Block 4	139,260.00	5,390.00	5,600.00	-	-	360.00	-	-	75,550.00	226,160.00
Block 5	59,520.00	4,050.00	4,350.00	-	6,120.00	2,190.00	-	-	84,000.00	160,230.00
Block 6	98,690.00	4,050.00	2,200.00	10,000.00	3,980.00	8,160.00	1,200.00	-	62,850.00	191,130.00
Total	895,059.00	28,160.00	45,917.00	18,420.00	41,140.00	49,360.00	33,100.00	7,200.00	1,463,380.00	2,581,736.00

Table 8-4 shows the number of type of assets, an estimate of unit cost and the percentage of value of each asset of total value. The types of assets valued are much as expected but the proportion of value accounted for by economic trees is surprisingly high. One explanation is that perennial trees require little and intermittent labour which can be convenient for non-resident households. Housing accounts for only 34% of value, and it is important to distinguish “higher value” housing from the traditional housing. Low value housing may be symptomatic of non-residence: the main home of non-resident households might be outside Musakashi. Only two higher value houses were identified. Other assets are simple structures that can easily be reconstructed locally.

Table 8-4 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	2	44,550	22,275	2%	4,050
Low value housing	152	812,775	5,347	32%	972
Kitchen	21	34,454	1,641	1%	298
Kitchen utensil stand	17	1,770	104	0%	19
Drying stand	13	1,510	116	0%	21
Shower	27	3,640	135	0%	25
Toilet	6	5,400	900	0%	164
Pit latrine	21	18,490	880	1%	160
Thatch Stand	2	630	315	0%	57
Shelter	28	39,477	1,410	2%	256
Shop	1	6,440	6,440	0%	1,171
Kiosk	1	180	180	0%	33
Office	1	1,800	1,800	0%	327
Chruch hall	1	10,000	10,000	0%	1,818
Kraal	7	5,450	779	0%	142
Fence	1	460	460	0%	84
Goat house	1	2,100	2,100	0%	382
Pig sty	1	1,500	1,500	0%	273
Rabbit hutch	1	750	750	0%	136
Chicken run	6	23,260	3,877	1%	705
Hatchery	1	1,500	1,500	0%	273
Fish Pond	2	6,120	3,060	0%	556
Grain store	55	46,630	848	2%	154
Bird nest	29	2,730	94	0%	17
Water well	7	4,100	586	0%	106
Water tank	1	4,000	4,000	0%	727
Borehole	1	25,000	25,000	1%	4,545
Hammer Mill	1	7,200	7,200	0%	1,309
Economic trees	1,400	1,463,380	1,045	57%	190
Total		2,575,296.00			

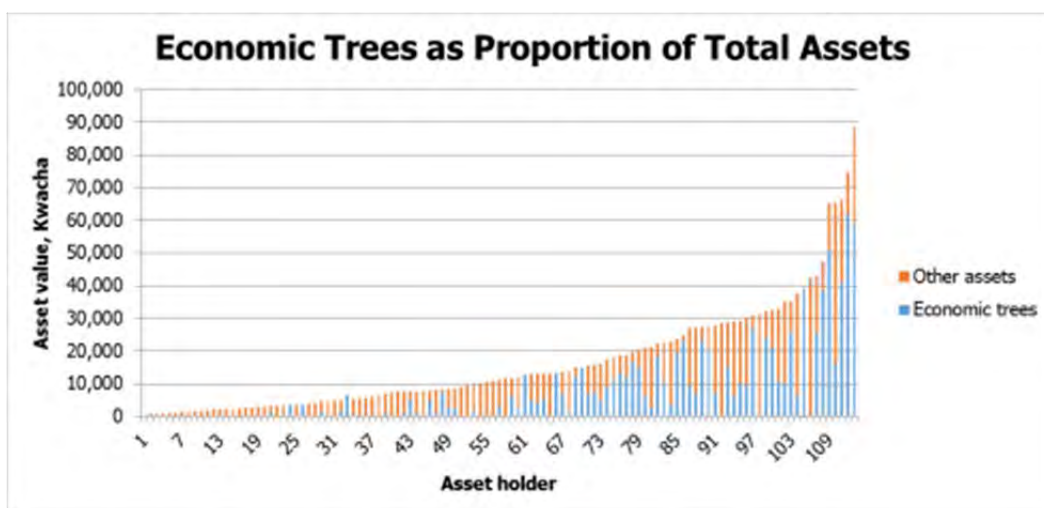
The proportion of economic trees in asset value is notable. The breakdown of the valuation is given in Table 8-5. Banana and mango account for the greatest proportion of value, though the number of plants suggests that the total area of economic trees must still be quite small. The planting density for banana is about 1,800 plants per ha and that of mango is about 300 trees per ha.

Table 8-5 Economic Trees: Frequency and Value

	Observations	Number of plants	Total value	Unit value, Kwacha	Unit value, US\$
Avocado	52	135	97,550	723	131
Banana	72	1,872	897,700	480	87
Coffee	1	1	30	30	5
Grenadillo	2	4	350	88	16
Guava	21	36	19,200	533	97
Jatrofa	1	5	2,500	500	91
Lemon	3	8	7,450	931	169
Mana	12	23	18,400	800	145
Mango	89	482	369,650	767	139
Mulberry	4	57	5,150	90	16
Neem	1	1	50	50	9
Orange	9	40	37,650	941	171
Pawpaw	3	5	5,700	1,140	207
Peach	2	4	1,350	338	61
Pine	1	3	150	50	9
Pineapple	1	8	400	50	9
Sugarcane	1	1	50	50	9
Unspec	1	1	50	50	9
Total	276	2,686	1,463,380		

Economic trees as a proportion of total assets are shown diagrammatically in Figure 8-1. The data exclude one asset holder with 900 mature banana plants, valued at ZMW 540,000. There is an apparent positive correlation between total assets and economic tree assets. To give a more equitable compensation to wealthier asset holders it is suggested that economic trees are compensated separately from other assets: in other words the value of economic trees lost is paid in full and the value of other assets is offset against the value of a replacement house.

Figure 8-1 Economic Trees as a Proportion of Total Assets



Asset values by asset holder are reported in APPENDIX B: Assets Compensation Matrix.

8.3 Income Restoration

8.3.1 Principles of Income Restoration

The Musakashi 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. On Tier 1, it is intended that each household receives an irrigation allocation, the size and location of which will be determined by the community with support from IDSP depending on the household's socio-economic situation and capacity to cultivate the irrigation, particularly in respect of labour availability. No individual title will be given to the allocation. 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 in all Musakashi zones during 2013 (see six monthly Progress Reports of IDSP CP&CB Provider, 2013-2014). There is now a good appreciation by Musakashi farmers of the way the tiers will operate, both financially and technically. However, the modalities for the operation of the Community Land Trust have not yet been decided by IDSP.

Although awareness about the project can be considered good and the RAP proposals have been accepted (see Appendix D: Minutes of the Public Disclosure Meeting) there are very few choices and options available to community members. MAL/IDSP have already communicated that to take financial compensation and exit the scheme will be discouraged. To stay in the Musakashi area and not accept the irrigation allocation would on the face of it relegate the household to comparative poverty. By opting into the irrigation scheme a new set of risks is accepted by the community. The minor irrigation already practiced in the scheme does not require the high level of technical and financial cooperation of the major irrigation scheme that will replace it. However, exposure to the poorest is reduced by greater collective authority of the community in monitoring scheme performance and making corrections, for example in the location and size of household irrigation allocations if a household becomes relatively impoverished due to poor soil or intermittent water delivery.

The land reorganisation required to implement the proposed project would affect all households in Musakashi. It would be unrealistic to focus only on income restoration for the households who will receive compensation for loss

of fixed assets or must relinquish farm areas from the irrigation blocks and dam site. The concept of a displaced population being absorbed by a host community is meaningless when all consider themselves members of the same community initially. For this reason it is necessary to demonstrate that the IDSP intervention will deliver sufficient benefits for all community members to commit to the proposed project.

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.¹⁸

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 in 2015.¹⁹

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 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.²⁰

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 planned for 2015.²¹

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.

¹⁸ See 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

¹⁹ See PIM, module 4

²⁰ See <http://www.iicd.org/articles/iicd-partners-with-world-bank-to-improve-yields-and-income-of-women-farmers-in-zambia>.

²¹ See PIM, module 7

8.3.3 Present Socio-economic Status

The present socio-economic situation at Musakashi is described in detail in the ESIA. Table 8-6 summarises the main findings. The share of net farm returns is heavily in favour of larger farms (9% of households capture nearly 40% of the net farm returns), perhaps more so than at other sites: at Mwomboshi 18% of households capture over 50% of net farm returns and at Lusitu 8% of households capture 25% of net farm returns.

Table 8-6 Farm Return, Food Energy and Labour by Farm Type, Present

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
very large	13	39,852	29%	1,414	72	1977%	9,370	10,966
large	18	13,149	10%	411	69	599%	2,848	11,005
medium	112	51,704	38%	1,533	456	336%	11,511	72,542
small	219	31,849	23%	802	841	95%	6,127	134,860
Total	362	136,553	100%	4,160	1,437	290%	29,856	229,373

Many household members of small farms are apparently barely food secure and must sell labour off-farm or engage in alternative livelihood activities to make ends meet. Shortage of labour is only an issue for very large farms, though some are certainly partly mechanised. All other farms have a substantial excess of labour. Bearing in mind there are few non-farm income generating activities in Musakashi it is obvious that labour must look outside the site for other opportunities.

Unlike Lusitu and Mwomboshi, farming in Musakashi is not a functioning community system. Farm size is set exogenously (by the District Council). Household composition in Musakashi is selected by economic factors rather than demography: many households are not truly resident at site and activities outside also support incomes. Farming is almost a hobby for some households – the value of production is only US\$ 150 per cultivated ha. At Lusitu it is twice that, at about US\$ 300 per cultivated ha.

The characteristics of disadvantaged groups have been examined using the data from the Musakashi census. The conclusions are:

- About one third of recorded households do not appear to be producing sufficient food energy to cover household requirements – but we have no idea what additional livelihoods they practice or even the extent of the family structure because many households are non-resident;
- Quite a large proportion of enumerated households (65%) have land claims going back to 2011;
- About 33% of enumerated households appear to be squatters – they cannot be demonstrated to be more disadvantaged than those households with a claim to land;

- 32% of enumerated households are female headed – again they show no characteristics suggesting they may be disadvantaged in relation to male headed households;
- Polygamy is not an important feature of marriage at Musakashi, also it should be noted that in some households (up to 50) both husband and wife already have title to separate holdings;
- The number of “youth” on site suggests that household number could increase by one third within a few years: this should be planned for.

CP&CB recommends to IDSP/MAL that the apparently unmanageable situation that has developed at Musakashi in respect of land allocations be simplified by:

- Acknowledging limited land rights (within the proposed Community Land Trust) to all enumerated households, both those with some claim from 2011 and those with apparently none;
- Re-drawing cadastral boundaries (which cannot take account of the best land suitability mapping which post-dates them), based on the irrigation design in the Engineering Feasibility Study;
- Selecting Tier 2 farmers from a wider pool than the present resident households;
- Make allowance for the anticipated growth of households by planning youth irrigation allocations;
- Treating male and female-headed households equally in making irrigation allocations.

If these recommendations are followed, specific scenarios can be developed, as described in the next sections.

8.3.4 Irrigation Allocations

8.3.4.1 General Principles

The socio-economic environment in which land is distributed and controlled is different at Musakashi compared to Lusitu and Mwomboshi. MAL replaces the Chief’s administration as land “custodian”²². Zone Chairmen replace village headmen. The Musakashi “community” is a heterogeneous assembly of relatively recent arrivals that have established themselves where they can in relation to the very poor infrastructure and land quality available. The organisation of cadastral records is chaotic. On the positive side, a cut-off point has now been established (7th September 2013) and the block’s land resources (particularly with irrigation) may with careful planning eventually lead to a viable block farm in which the present residents, augmented by selected PPP participants (FarmCo, Tier 2), can carry out productive agriculture.

²² Farm 4287 may have been under the control of Mufulira District; this control appears to be rescinded according to the document [IDSP Report Verification of the Land Status of Musakashi](#), IDSP April 2013. Farm 4288 (SADA) has been under MAL’s control for some time.

8.3.4.2 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:

- Irrigation allowances should be allocated to representatives (household heads) of households that are identified and listed by Zone Chairmen (based on the present system similar to headmen's books, embodied in the Farm Register of the Block Supervisors) and certified by the Community Land Trust;
- 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 Community Land Trust 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 Musakashi, the main elements are as follows:

- The total Tier 1 area is 198 ha, divided into 0.25 ha management units, giving 792 allocations;

- There are 120 youths and 362 households (Tier 2 farmers are expected to be recruited externally);
- CLT will have to decide an appropriate allowance for disadvantaged groups, the model assumes one quarter of an allocation (625 m²) to youth;
- The allocations in the remainder of Tier 1 (190.5 ha and 762 allocations) can be divided between 362 households (100% of the households in the census) by listing the farm area of each (the total farm area is 762 ha), calculating the area in each farm class (the class limits used are based on quintiles of the farm size frequency distribution and are: small <2 ha, medium 2-4 ha, large 4-6 ha and very large >6ha) and apportioning the 762 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 average allowance of 17 allocations, large farms 4 allocations, medium farms 3 allocations and small farms 1 allocation ("whole" allocations can be achieved for households by rounding to the nearest 0.25 of an allocation 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 249 ha or 31% 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).

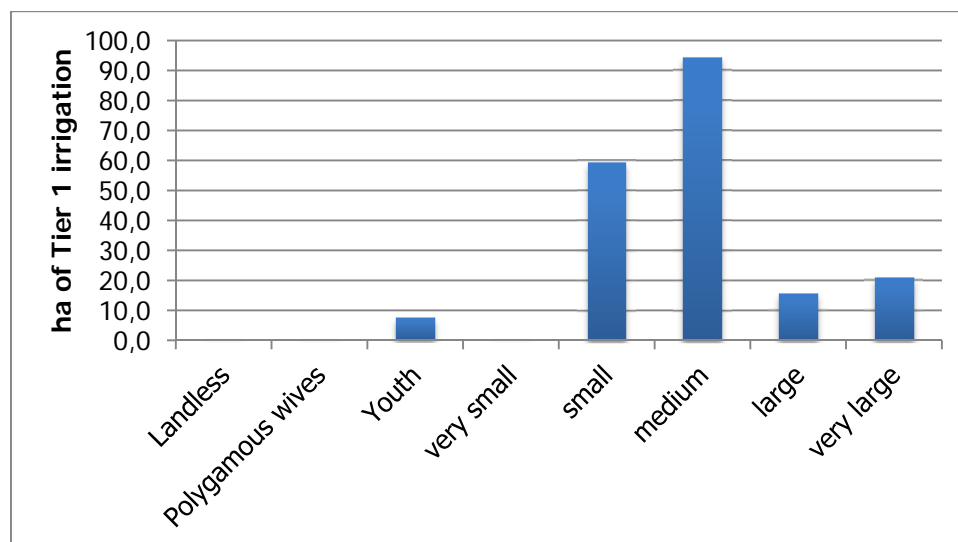
The summary model output is shown in Figure 8-2. The allowance by household is given in APPENDIX A1: Household List and Indicative Allocations. A large proportion of Tier 1 would be allocated to small and medium farmers, which is satisfactory for equity. Disadvantaged households and individuals do not 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 (see section 8.3.5).

The last column in the table of Appendix A shows the difference between the allocated irrigation plot in Tier 1 an assumed productivity gain of 8 times (expressed in Net Return)²³ compared to rainfed agriculture plus the housing plot in the resettlement area minus the rainfed land occupied by the household. 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 15.4 times per ha. Positive values in this column indicate that households in potential will be able to restore their

²³ Feasibility Studies and Participatory Planning of Group 1 Sites and Prefeasibility Studies of Group 2 Sites. Final Financial and Economic Report – Musakashi Site, March 2014. Section 8.4 Economic Benefits and Returns, Table 8-22 estimates the productivity increase at 15.4

livelihood. Households with a negative difference (in total 301ha) need top up rain fed land. Of this 310ha, 164.04ha belong to 3 farmers (118ha, 30ha and 30ha respectively) who can be allocated land in Tier 2 (102ha). The remaining 137ha has to be identified within the available 400ha suitable for rain fed.

Figure 8-2 Summary of Tier 1 Irrigation Allocations by Farm Size Group



The initial outline allocation of irrigation holdings has been prepared following the principles described above. The land adjustments required are:

- Musakashi is a large site (12km from east to west and 10 km from north to south): RAP results suggest that only about 50%²⁴ of households will be able to access the irrigation blocks from their present location;
- Consultation of the community was not conclusive, but the general feeling appeared to be that all households in Musakashi should benefit from irrigation irrespective of location, therefore planning irrigation allocations should allow for the possibility of most households reported by the census taking up allocations: 100% of those enumerated in the census is assumed in the calculation above.

It is also assumed that for the 50% of households located close to the irrigation blocks, about 50% of their cultivated area is within the irrigation blocks: these parcels will have to be re-located outside the block if suitable land is available. Table 8-7 shows the readjustments to average farm size with-project.

Table 8-7 Summary of Readjustments to Average Farm Size after RAP

²⁴ The Cadastral Map shows that only about 160 households are now settled in the vicinity of the proposed irrigation development (44% of households enumerated). This situation would provide a small number of additional Tier 1 allocations available to those presently resident too far away to access Tier 1, who could move if they wished (at their own expense). But there are a further 155 households listed by PPSC (see Appendix A1) which are probably non-residents but may also have a claim on irrigation allocations.

Farm category	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	
	number	size	ha		20%	20%	10%	Farm ha outside blocks	new number of farms	new farm size	Number	0.25	Tier 1		Tier 2	
					Farm area lost by group							ha				
very large with irrig	16	18.49	295.84	36%	13	7	26	249.69	16	15.61	17	4.25	19.86	21		
large with irrig	15	4.73	70.95	9%	3	2	6	59.88	15	3.99	4	1	4.99	15.7		
medium with irrig	112	2.77	310.24	38%	14	7	27	261.85	112	2.34	3	0.75	3.09	94.5		
small with irrig	219	0.67	146.73	18%	7	3	13	123.84	219	0.57	1	0.25	0.82	59.3		
youth and other	120							0	120	0.00	0.25	0.0625	0.06	8.00		
Tier 2								0	19	0.00	1	5	5.00		93.50	
Total			823.76	100%										198.50	93.50	

There are 159 HH actually living inside and around the blocks. For re-settlement purposes, Tier 2 farmers may have to be added, say 19 who may come into the Musakashi scheme from outside. In addition an unknown number of HH may move from the west of Musakashi. There are 362 Musakashi HH reported in the census. Many live too far from the scheme to farm it without moving. They may move but would have to move at their own expense. Alternatively they may choose to travel or even sub-let their allocations. Allocations will be made through community meetings at detailed design stage.

These calculations are preliminary but are likely to be a reasonable reflection of the impact on Musakashi farming as a whole. If most farmers move from the west to obtain irrigation benefits then the eastern area would have to accommodate 316 households irrigating in Tier 1 if the recommended irrigation allocations in Table 8-7 are adhered to, plus 19 Tier 2 farmers: say 340 households²⁵. This would be a major settlement.

The responsibility for planning for an influx of households who are not displaced by the irrigation scheme but still have some rights to access it (as Musakashi residents) is not part of this RAP. The District Council, as local planning authority would assume the responsibility. In fact, the District Council have already identified a site. However, the PPSC representing local residents say dispersed settlement on large plots is preferred.

Once again it is emphasised that the approach to RAP in Musakashi should be simple. The Community Land Trust will serve the interest of all. There will be some unfortunate losers – notably those who live too far away (in the SW of the block farm) to access Tier 1 but they will benefit from labour opportunities on Tier 2 and 3. The alternative, of trying to disentangle the (mostly incomplete) land rights of all households described in section 3.3.2 will lead to frustration and delay.

Appendix A1: Household List and Indicative Allocationsto this report gives a list of the households enumerated in the RAP 2013 census, their geo-reference, farm area (if the household has land rights, the sum of the area of cultivated parcels reported may not be equal to the rights the household may have secured), the number of family members, youth (the number of sons and daughters of the household head between the ages of 15 and 24) and the zone of residence.

²⁵ But not all households in the extreme west may move from their present location, instead preferring to construct temporary accommodation at their irrigation allocation and continue to run their rainfed farm in the west. They may even rent out their irrigation allocation. Household choices would have to be monitored to ensure scheme efficiency was not affected.

The estimated food security status of the household is also given (1=food insecure) but as described in section 3.3.1 this may not be meaningful. Female-headed households are identified (1=female headed). Whether or not any one in the household has any form of land title is identified (1=title). 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. The model allocates 198 ha of Tier 1 irrigation to 482 irrigators in allowances ranging in size from 625 m² to 2.2 ha.

8.3.4.3 Community Solutions

Community consultation 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. However, the options discussed were illustrative and based on only 50% of Musakashi farmers taking up irrigation allocations. This does not now seem a likely scenario so the options are not reproduced here.

8.3.5 With-project Future Socio-economic Position

It is straightforward to prepare an aggregate farm budget for the project area with-project, see the summary Table 8-8 and compare with Table 8-6 above. Economic income comparison between existing (rainfed agriculture) and proposed farming systems (irrigated agriculture) in Musakashi show that the net return per ha increases 15 times²⁶.

The farm labour budget shows that the labour requirement for the whole site increases from about 30,000 days to 58,000 days per annum (there are negligible labour requirements for stock): the labour occupancy rate would rise from 11% to 22%: the figures suggest that sufficient household labour is available on all farms but the very large and large categories, the members of which would have to hire. With over 1.0 ha of irrigation this is expected. The incremental return to household labour with-project is good: rising from \$4.50 per labour day to \$13.47 per labour day. The addition of the irrigation allocation doubles the household labour requirement for cultivation and the increased productivity of irrigation on a large allocation (compared to the rainfed area of the farm) increases return to labour by 70%.

The food security model sees Musakashi food energy production from rainfed and Tier 1 land rise from about 4 bkcal to 7 bkcal per annum. This is not a great increase, explained by the fact that the incremental production will be mostly vegetables that have a low kcal content per ton. Nevertheless, irrigation is sufficient to guarantee Musakashi food security, with irrigated maize alone exceeding the block's food energy requirement. Table 8-6 when compared with

²⁶ Feasibility Studies and Participatory Planning of Group 1 Sites. Financial and Economic Report – Musakashi Site, March 2014, page 120, Table 8-23

Table 8-8 shows a change in the distribution of economic activity between groups. Farmers that remain with rainfed farms contribute only about 10% of total net farm income, though they account for 38% of the holdings. This is an inequity that could be mitigated by re-settling these farmers to get access to Tier 1, though it may be costly, and will result in smaller irrigation allocations for the more fortunately situated.

Note the substantial proportion of total net farm income estimated for youth irrigators, though the return per farm is quite low.

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

Farm category	Number	Net farm return per farm, US\$	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	% labour occupancy
very large	7	3,301	21,459	3%	761	25	3037%	5,045	7,498	67%
large	9	730	6,574	1%	205	24	869%	1,424	7,285	20%
medium	56	462	25,852	4%	767	132	580%	5,756	41,261	14%
small	110	146	15,997	2%	403	181	223%	3,077	59,510	5%
very large with irrigation	7	6,957	45,223	6%	515	25	2054%	4,289	7,498	57%
large with irrigation	9	5,649	50,837	7%	376	24	1592%	3,025	7,285	42%
medium with irrigation	56	3,613	202,316	28%	1,518	132	1148%	12,173	41,261	30%
small with irrigation	110	1,577	172,702	24%	1,335	181	737%	10,592	59,510	18%
youth irrigators	120	1,529	183,474	25%	1,263	96	1311%	9,876	26,400	37%
Totals	482		724,433	100%	7,143	820		55,258	257,508	21%

All farm types are food secure (at the average). The youth irrigators are assumed to operate their allocation alone, so their position is also good. The very large and large farm groups still need to hire labour but there is a substantial labour reserve available amongst smaller farms. With the exception of the position of Musakashi farms that remain rainfed, this is a satisfactory result for equity and financial incentives to adopt the project appear adequate.

Note that production on Tier 2 has not been modelled: Tier 1 and the rainfed area will be the main land resource for Musakashi farmers. Tier 2 and 3 may present opportunities for employment only.

8.4 Livelihood Restitution

Livelihood restitution for farmers (80% of the adult population) will be through the irrigation allocation to all existing households and youth identified in section 3.3.3. 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. Estimates of the benefits of the irrigation allocation to each category are described in section 8.3.4 and concluded to be a satisfactory incentive to adopt the proposed project.

There are other livelihood activities reported in the Musakashi area carried out by a 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 8.3.5). 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 employment.

However, unreported livelihood activities may be a hidden problem, in particular land extensive activities such as seasonal forest product collection (mushrooms, termites, medicinal plants etc.) that may be reduced or even terminated by the “privatisation” of land required by project implementation. It can be hoped that the increase in returns to family labour (which almost doubles) will be sufficient for household members to review their competing time allocations between livelihood activities and, considering the opportunity cost, devote more time to irrigated agricultural production.

Grazing activities are insignificant at Musakashi therefore no changes to present livestock management are proposed in this RAP.

Measures to restore income of the affected population are discussed in section 8.3.4, which is itself a summary of more detailed studies on socio-economic impact of the project described in the ESIA. It is concluded that an irrigation allocation will lead to increased net farm income for all farmer groups identified, which include disadvantaged groups identified from the RAP census. Labour and land studies based on whole-farm budgets carried out as part of the ESIA and RAP indicate that the operation of the irrigation allocation is feasible in the context of present farming activities. Some of the farmer groups will require support to commence irrigation (training, credit, input supply etc.). This is planned in Phase 2 onwards of the CP&CB work programme.

8.5 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 Musakashi 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 lease will be transferred to the Community Land Trust. The intention is that an entitlement certificate 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, see Appendix E: Low Cost House Design.

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 section 8.3.4.2 in respect of preserving access to irrigation for youth.

8.6 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.

In principle, there should be no temporary loss of household income from displacement, as 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. Critical will nevertheless be 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 will have to 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. Assistance in the form of food, temporary accommodation, medical assistance, employment referrals or priority employment in project activities may be necessary, in particular during the interim period prior to the irrigation scheme becoming operational.

In the case of perennial crops, these have already been valued and reported in this RAP (see Table 8-5 Economic Trees: Frequency and Value). The recommendation is they should be compensated for in cash, rather than set against the value of fixed assets and compensated for with a low cost house. This will allow the farmer to purchase more seed stock to replace the perennials that will have to be destroyed.

No businesses 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 will not be made. The area for marginal and common land use (in future over 60% of the Musakashi area) will not be significantly reduced. Another important argument for not compensating

for land has already been made: all land will be in the communities' charge 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 Musakashi. The re-settlement areas are within the zone areas 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 no more than three kilometres from the points of displacement;
- Displacement will not be outside the zone boundary, hence logistical support from the zone communities is likely;
- Although over 100 households will move, the movement will be in phases depending on the construction programme: possibly no more than 30-40 households would have to move in any one episode and the episodes would take place over a 20 month construction period;
- 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.); except for salvage materials;
- 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, equipment that are unlikely to be voluminous or heavy and salvage materials. There are hardly any livestock, which can be walked.

It is estimated therefore that a light lorry 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. Will be entitlement matrix.

9.2 Timing of the Move

Timing of the move depends on the construction schedule. The first principle behind the resettlement schedule is that each resettlement site will be prepared before access is required by the contractor to begin scheme construction, see section 12. The second principle is that movement should take place after harvest of rainfed crops and before planting, so that Zone Chairmen can secure access to sufficient accessible land for each displaced household before the move. A detailed plan is given in section 12. Both the Municipality Council and the MAL as main land holders have the authority to deal with distribution of rainfed land.

9.3 Temporary Loss of Income

In principle, there should be no temporary loss of household income from displacement, provided District Council and Zone Chairmen can make sufficient quality rainfed land available prior to the move. 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 state land. The intention is that before construction of houses and access roads, the tenure of the land should be changed and 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 transformation 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 allowance²⁷, 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

²⁷ www-wds.worldbank.org/servlet/.../IB/.../RP1920VOL120PAPER.pdf

event, the disturbance allowance has been included in the RAP implementation budget in section 13.

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; Actual irrigation plots will be allocated when irrigation schemes are constructed but the size of the plots have been determined by CLT.
- 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 short distances 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.

Kraals and other small wooden structures associated with existing housing can be dismantled and transported to the new sites by householders: as these structures are not being compensated for (a new house is held to compensate for all fixed assets) there is no obligation to assume responsibility for transport.

10.1.2 Water Supply

The lack of potable water (together with lack of road access) has always been an issue in the development of the Musakashi block farm. Settlers have often not been able to access their allocated farms because of lack of infrastructure development. As part of the resettlement, IDSP should ensure access to drinkable water for displaced households. Nevertheless, the arrangements for potable water supply with the IDSP project are not yet clear. Potable water supply will not be supplied as part of the irrigation design. Access to groundwater requires test drilling that has not been done. The ESIA mentions a perched groundwater table that is sensitive to contamination and will probably not be a sustainable source of supply due to possible contamination and

limited extent. It is most likely that water will have to be pumped from the Kafue, purified and distributed through a pipe system.

10.1.3 Drainage and Sanitation

The socio-economic survey showed that sanitation is good at Musakashi. Most households have a pit latrine. The resettlement areas will improve sanitation overall: each household in the resettlement area will be provided with a VIP toilet.

10.1.4 Waste Disposal

Household waste disposal is not an issue at the Musakashi 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 zone of origin. Numbers of households in each zone will therefore remain the same. There may be some opportunity for individual households to re-locate from the west of Musakashi if they wish, to obtain better access to Tier 1 and 2. However, social relationships in Musakashi 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 Fuel wood 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 three kilometres from their point of origin and displaced households will normally remain in the same zone area. There will therefore be no incremental impact on the demand for fuel, grazing and other natural resources. The Musakashi Irrigation Project itself will have an impact on fuel and grazing resources because large areas of Musakashi will be irrigated. This impact is discussed in the ESIA. It is sufficient to note there will be a considerable increase in crop residues that will counter-balance to some extent the removal of woody biomass and reduced access to natural grazing.

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 over three hectares, 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 Musakashi 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 The Consultation Process

The Community Participation and Capacity Building (CP&CB) Component of IDSP has been responsible for consultation, public disclosure and communication of information about the project and the Resettlement Action Plan. This is achieved through the continuous presence of a Site Facilitator at Musakashi, who liaises with a Project Planning Sub-committee (PPSC) elected by the community. The PPSC has been established since June 2013. Members include representation of vulnerable groups, including women's and youth representatives. Future consultation during RAP implementation will be also be carried out through the PPSC.

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.²⁸ 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.


²⁸ See Progress Report January – June 2013 paragraphs 2.1 and 2.2)

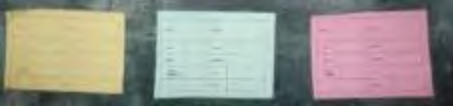
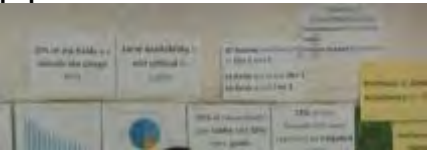
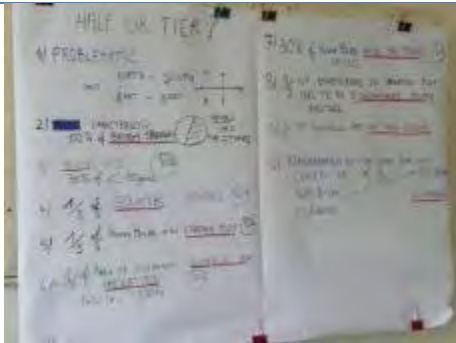
Community consultations about RAP are organised by the PPSC and are always well attended. The early consultation meetings and Public Disclosure followed the form of a presentation followed by discussion. Consultation about the data collected and the details of the RAP followed a more participative approach, as described below. The main achievement to date has been the acceptance of the IDSP despite the substantial resettlement implications, which allowed engineering design and arrangements for implementation to progress. The agreement has covered the identification and socio-economic characterisation of all project beneficiaries, the communities' agreement to irrigation block boundaries and the identification of re-settlement areas described in section 7.

It is important to emphasise that community consultations between February and April 2013 led to an important milestone: a broad agreement with the community on the outline of the irrigation blocks and tiers which enabled the Engineering Feasibility study to progress. These agreements are documented in community presentations (Strategic Options for Resettlement Planning at Musakashi Group 1 Site, CP&CB March 2013). The main issues identified from these meetings are described in section 7.1. From that time onwards, it would have been extremely difficult to modify the RAP approach because the Engineering Feasibility study took priority. Nevertheless, the PPSC remains the elected body through which concerns about the project in general, and resettlement issues in particular can be transmitted through the Site Facilitator and CP&CB to the highest levels in IDSP/MAL.



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. 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.

Figure 11-1 Elements of the Consultation Process

Tools	Methodology	Efficiency
<p>1</p> <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. If the information was wrong, the HHH signalled his/her disagreement with an orange sticker, indicating that the census list must be corrected. 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>

	Tools	Methodology	Efficiency
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>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>	<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>
3	<p>Validation of the census data by A3 hardcopy editing</p>	<p>The census data was provided on A3 hardcopy to the PPSC to firstly correct the HHProfile 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>

SOFRECO

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 Blue cards: Community action Yellow cards: Government action Pink cards: Services Providers action</p>	<p>Practical Fast Understandable Visual</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 Good tool of communication 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 8.3.4);
- 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 620m²);
- 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 allocations were 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 planning process was encouraging: this suggests a positive outcome to the RAP. At Musakashi data validation was completed by May 2013: the validated data is included in the RAP.

11.2 Public Disclosure of the RAP

Following announcements in the *Zambian Press* and extensive preparation, the RAP for Musakashi was presented by the Team Leader CP&CB Provider and the Resettlement Specialist CP&CB Provider at the RAP Public Disclosure Meeting held at ZARI (2 km from the Musakashi site) on 16th May 2014. About 166 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, District Council and local people.

The presentation gave an overview of the requirements of RAP procedures, the principles governing re-settlement and compensation, the consultation process which had already taken place and the elements of the RAP described in this document. The participants were 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 locations 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 D: Minutes of the Public Disclosure Meeting.

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

Figure 11-2 RAP Public Disclosure Meeting Musakashi



11.3 Community Participation in M&E

Monitoring and evaluation will be based on the comprehensive database compiled during RAP preparation. The database not only identifies every household head in the Musakashi scheme but also individual household members and contains a wide range of information 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 surveys. In respect of monitoring the RAP, 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.

12 RESETTLEMENT SCHEDULE

The Resettlement Schedule is shown in Figure 12-1. The Detailed Engineering Design estimates a construction period of 18 months. The IDSP Workplan, presented on 8th October 2014 identifies the necessary tasks to secure the IDSP Musakashi 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 Musakashi 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. Finalization of the CTL arrangements must coincide with the completion of the land transfer process.

The land transfer process is described in section 5.1.1.3. At Musakashi, already on State land, no Chief's permission is required for conversion and the site can go directly for titling. 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. Finalization of the land transfer completion process must coincide with the completion of the CTL arrangements.

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 within one year; the dry season of 2015. Particularly at Musakashi, land clearance will be required on the resettlement sites: much of the area is in heavy woodland and will have to be prepared for cultivation before resettlement. This item is included in the budget.

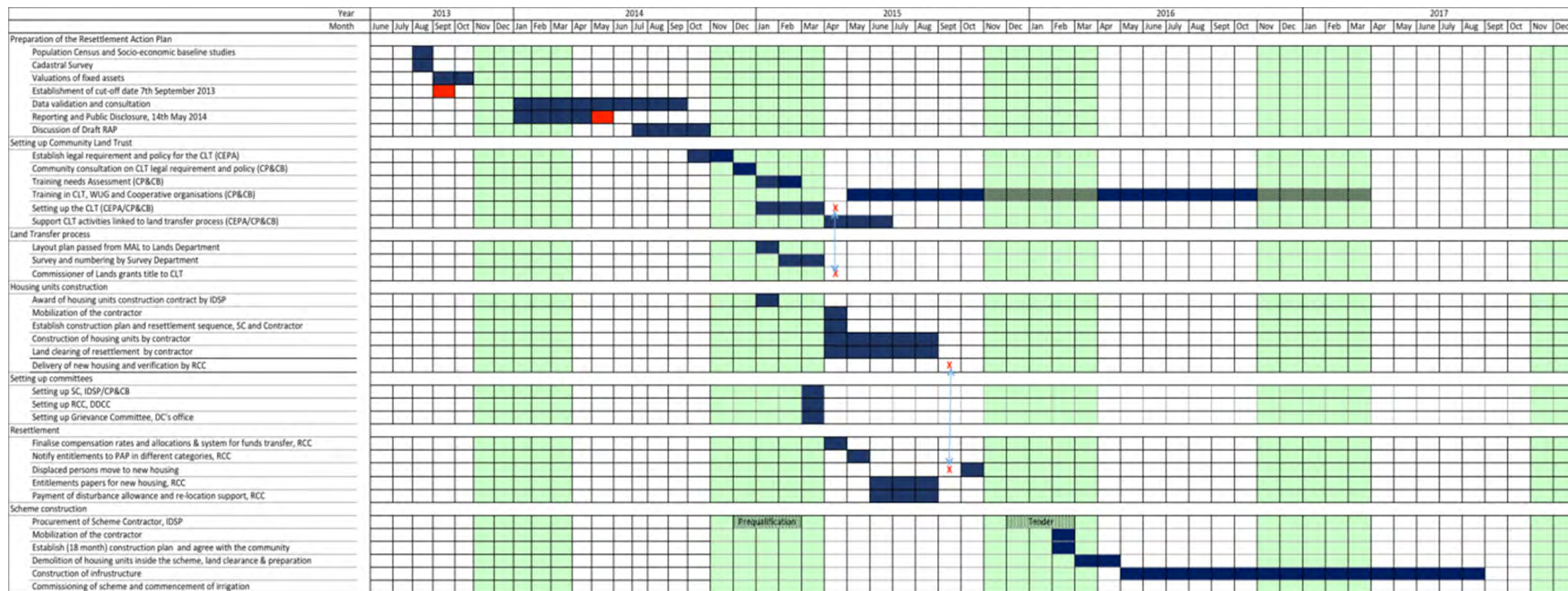
The Schedule then plans the process of resettlement. Another critical time linkage in the schedule is that the resettlement areas should be developed by the time displaced persons are ready to move. To minimise disruption this movement should precede the wet season. Not only is it uncomfortable to move 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 2016.

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 house. 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 detailed during the dry season. At Musakashi the result is feasible. Houseplots sizes, agreed with the displaced households, are similar in size (3 ha) to the modal farm size offered by the District Council when the block farm was first planned. An allowance has been made for those not living inside the blocks but cultivating there. 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.

The Schedule also shows the beginning and expected duration of construction, from March 2016 to August 2017. That implies that the community will rely on rainfed cultivation for the next three cropping seasons, 2014/15, 2015/16 and 2016/17.

Figure 12-1 Resettlement Schedule



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 4% 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 77% 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 (70% 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 122.5 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 Musakashi, while administrative costs are only 4% of the total RAP budget, they account for 12% 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 Musakashi

	Unit	Quantity	RCC	Grievance	Headmen	CP&CB	IDSP MAL	Total	Capital	Recurrent
Computing										
Computer	each	3100	1	1					6,200	
Printer	each	600	1	1					1,200	
Consumables	lump sum	2000	1	1						4,000
Total computing costs			5,700	5,700	-	-	-	11,400		
Transport										
Mufulira-Site-Mufulira	km	50	10	5	-	2	5			
Mufulira-Lusaka-Mufulira	km	1000	3	3	-	2	5			
Total km			3,500	3,250		2,100	5,250			
Total transport costs	ZMK/km	1.5	5,250	4,875		3,150	7,875	21,150		21,150
Miscellaneous costs										
Stationery	lump sum	750	750	750		750	750			3,000
Training materials	lump sum	750	750	750		750	750		3,000	
Security arrangements for payments	lump sum	750	750	750						1,500
Communications	lump sum	750	750	750		750	750			3,000
Total Miscellaneous items			3,000	3,000	-	2,250	2,250	10,500		
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
Price contingencies		7%	1,621	1,455	560	378	1,456	5,470		5,470
Physical Contingencies		10%	2,316	2,078	800	540	2,081	7,815		7,815
Total budget			27,095	24,316	9,360	6,318	24,342	91,431		
Computing %			21%	23%	0%	0%	0%	12%		
Transport %			19%	20%	0%	50%	32%	23%		
Miscellaneous %			11%	12%	0%	36%	9%	11%		
Allowances %			34%	30%	85%	0%	44%	38%		

Capital	Recurrent	Capital
6,200		
1,200		
	4,000	
	21,150	
	3,000	
3,000	1,500	
	3,000	
	35,096	
	5,470.22	
	7,815	
10,400	81,031	-

Table 13-2 Musakashi RAP Implementation Budget

Item number	Item	Unit	Quantity	Unit cost, ZMW	ZMW	USD	%	2015	
								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	10	variable	1,166,967	188,220	8.9%	1,166,967	
2	Monetary compensation to asset holders not eligible for new housing to value of fixed assets lost	number of asset holders	9	variable	53,120	8,568	0.4%	53,120	
	Physical contingency		5%		61,004	9,839	0.5%		
	Price contingency		14%		176,791	28,515	1.4%		
	Development of Resettlement Areas								
3	New housing for displaced households, number	Number of houses	115	55,000	6,325,000	1,020,161	48.4%	6,325,000	
4	New housing for forced re-settlement from roads, pipelines and reservoirs (estimate)	number	0	55,000	-	-	0.0%	-	
5	New housing for forced re-settlement from feeder roads and power lines	number	0	55,000	-	-	0.0%	-	
6	Kitchen structure for displaced households	number	115	7,000	805,000	129,839	6.2%		
7	Land clearing of resettlement sites	ha	407.4	3,720	1,515,528	244,440	11.6%		1,515,528
8	Internal roads	km	40.74	1,000	40,740	6,571	0.3%	40,740	
9	Water supply	lump sum			413,614	66,712	3.2%	413,614	
	Physical contingency		5%		454,994	73,386	3.5%		
	Price contingency		7%		636,992	102,741	4.9%		
	Land Development Outside Resettlement Areas								
10	Land clearing of additional rainfed land	ha	122.5	3,720	455,700	73,500	3.5%		455,700
11	Access to rainfed agriculture areas relocated from blocks	km	3	1,000	3,000			3,000	
	Physical contingency		5%		22,935	3,699	0.2%		
	Price contingency		7%		32,109.00	5,179	0.2%		
	Disturbance and Relocation costs								
12	Disturbance allowance (all households)	Total fixed asset value	3,360,006	15%	504,001	81,290	3.9%	504,001	
13	Additional Disturbance allowance (vulnerable households)	Fixed asset value of vulnerable HH	-	15%	-	-	0.0%	-	
14	Relocation support (transport furniture and salvage, food etc)	Number of asset holders	124	1500	186,000	30,000	1.4%	186,000	
	Physical contingency		5%		34,500	5,565	0.3%		
	Price contingency		14%		99,981	16,126	0.8%		
	Administration of the RAP								
14	Computing, transport, allowances and miscellaneous				78,146	12,604	0.6%	10,400	67,746
	Physical contingency				7,815	1,260	0.1%		
	Price contingency				5,470	882	0.0%		
	Sub-total Monetary compensation for fixed assets				1,457,882	235,142	11.1%		
	Sub-total Development of Resettlement Areas				10,191,868	1,643,850	77.9%		
	Sub-total Land development outside Resettlement Areas				513,744	82,862	3.9%		
	Sub-total Disturbance and Relocation costs				824,482	132,981	6.3%		
	Sub-total Administration of the RAP				91,431	14,747	0.7%		
	Total Resettlement Budget				13,079,407	2,109,582	100.0%	8,702,842	2,038,974

In addition, about 245 ha of state land under 99-year lease (Farm 4288, plots 9899 and 9902) should be acquired by IDSP from private holders at Musakashi and compensated at a rate agreed by a professional quantity surveyor. A budget has not been included for this process, which is an issue under discussion between leaseholders and MAL.

The total cost of RAP implementation is estimated to be about ZMW 13.10 million (USD 2.11 million) including contingencies.

The resettlement costs can be compared with the cost of engineering works available from the Engineering Feasibility Study that are about US\$ 13.5 million for Musakashi. This suggests that resettlement might account for 13% of project costs.

Resettlement costs work out as about US\$ 2,002 per developed ha (1,054 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 unit cost is not as high as Lusitu because of the larger area to be developed and the lower population density.

The ESIA and RAP (presumably study/administrative costs) are together budgeted in IDSP COSTAB at US\$ 30 per ha. The RAP study costs for Musakashi come to about US\$ 11 per developed ha. The administrative costs of the amount (Table 13-1) amount to about US\$ 14 per developed ha.

The Resettlement and Rehabilitation Guidebook²⁹ notes: “those (RAPs) budgeting more than 3.9 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 445 persons in the households of asset holders that will receive compensation. The cost of the RAP is therefore US\$ 4,741 per capita and 3.1 times per capita GDP.

The total cost of the proposed project is US\$ 201.02 million of which US\$ 115.00 will be financed by International Development Association (IDA) of the WB. The GRZ contribution amounts to US\$ 23.445 and covers payments of compensations for resettled people. Additional co-financing from the private sector of US\$ 62.27 million is budgeted as part of the total project cost.³⁰

The Ministry of Finance and National Planning is the borrower of the fund provided by the WB while Ministry of Agriculture and Livestock is the responsible Agency for implementing the project including the RAP.

²⁹

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

³⁰ Oproject Appraisal Report (PAD), February 23, 2011

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 office of the Town Clerk, MAL and functionaries from the 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.

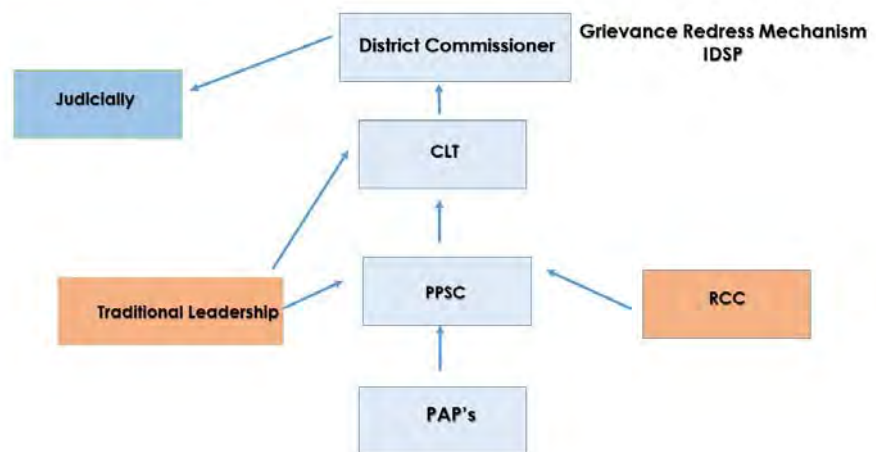


Figure 4: Grievance Redress Mechanism

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 2017 irrigation season (unless one of the two Kafue pump stations is commissioned before the other).

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. Therefore neither is well placed to provide an independent monitoring service. 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. However, as far as it is known, IDSP/World Bank has made no arrangements for such an expert panel for RAP and no budget exists. 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 should probably do a final evaluation of the RAP, though by then (probably in 2018) it will be a little late for remedial action to be taken against problems. Alternatively the IDSP M&E Specialist could be responsible for this. 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 Zone Chairmen.
- 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 Mwomboshi 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. 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, Zone Chairmen 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. 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 Mwomboshi 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	Procedural compensation instruction publicised to community	Knowledge in community of resettlement procedures	Resettlement proceeds according to construction schedule
		Demonstrated accounting of fund flow, showing funds applied for by head, funds received, disaggregation by eligible household, disbursement and receiving	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:	Changes in implementation as a result of grievances	Pending grievances by subject	
		Date received and full documentation		Hardship cases identified	
		Grievance lists posted in community			
		Period until resolution			
		Number of unresolved/referred grievances			
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 six-month internal reporting period would not be helpful, though it may be adequate at Mwomboshi where the construction period will be 30 months. 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 Zone Chairmen (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 2018, assuming a 30-month construction schedule, the dam fills and water is available for irrigation for the March-November irrigation season. 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 OD 4.3 principles;
- Satisfaction survey.

16 APPENDIX

16.1 APPENDIX A1: Household List and Indicative Allocations

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
1	ROSEMARY	CHIPA			0.75	5	0	Nsofu	1	1	1	0	0	-0.75
2	KASAKA	OKI	621399	8612848	0.50	6	0	Kobvina	1	0	1	1	1	2.50
3	STANLEY	PHIRI			0.00	1	0	Kobvina	1	0	0	0	0	0.00
4	SAMANAN	L. WOMBA			3.00	2	1	Kobvina	0	1	0	0	1	0.00
5	CHARLES	MWANSA	621976	8612171	1.12	4	0	Kobvina	0	0	1	1	1	1.88
6	ISAAC	NGANDU	623346	8612970	3.00	6	0	Kobvina	0	0	1	1	3	3.00
7	CHARLES	MVHANGA	623150	8612878	0.25	1	0	Kobvina	0	0	1	1	1	1.75
8	RAPHEL	MUWOWO	622736	8613082	0.75	11	3	Kobvina	1	0	1	1	2	3.25
9	SHADRECK	MUTOYA	622922	8612760	0.50	6	0	Kobvina	1	0	1	1	1	2.50
10	GEORGE	MUHANGA	622067	8612290	1.25	7	2	Kobvina	0	0	1	1	2	3.75
11	CEPHAS	MUKWATU	623481	8612750	1.00	5	0	Kobvina	0	0	1	1	1	1.00
12	MARY	CHIKOPA	624773	8608438	2.00	4	1	Kafue	0	1	1	1	2	3.00
13	WHYSON	NGAMBI			3.00	3	0	Kafue	0	0	1	1	3	3.00
14	AGNESS	MUMBA	625149	8607642	1.25	7	3	Kafue	0	1	1	1	2	2.75
15	AGNESS	MUMBA	626082	8608274	0.50	9	0		1	1	0	1	1	1.50
16	LOVENESS	MUMBA	626051	8608054	0.50	7	1	Kafue	1	1	0	1	2	3.50
17	EDWARD	KAYUMA			0.50	9	0	Sikanyika	1	0	1	1	1	1.50
18	MUSALA	K			0.25	4	0	Shangila	1	0	1	0	0	-0.25
19	LUKA	MUSOLE	622880	8612994	0.75	1	0	Kobvina	0	0	1	1	1	1.25
20	CHRISTOPHER	M	618556	8609252	3.25	8	0	Shangila	0	0	1	1	3	2.75

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
21	TIMOTHY	MARKIN			0.25	5	1	Sikanyika	1	0	1	1	2	3.75
22	MUNDANDULE	GOLDEN			3.00	5	0	Lwanshimba	0	0	0	1	3	3.00
23	MUYEMBE	FORDSON	616875	8611472	0.25	3	0	Lwanshimba	1	0	1	0	0	-0.25
24	CHANDA	SIMON			1.16	5	0	Lwanshimba	0	0	0	1	1	0.84
25	ESTER	BANDA	625102	8608001	0.00	1	0	Kafue	1	1	0	1	1	3.00
26	ESPINA	MUMBA			3.00	4	1	Kafue	0	1	1	1	4	6.00
27	MOSES	WAMKWAMBA			3.00	4	2	Kafue	0	0	1	1	4	6.00
28	MICAH	KASHIMBAYA			3.00	2	0	Kafue	0	1	1	1	3	4.00
29	ENOS	MUGALA	624832	8608606	5.00	12	4	Kafue	0	0	1	1	5	6.00
30	ELIZABETH	MAPOMA	624562	8607841	2.25	5	1	Kafue	0	1	1	1	4	6.75
31	YORTUM	SIAME	625087	8607884	3.25	9	0	Kafue	0	0	1	1	3	2.75
32	CATHRINE	MAKALA			0.50	1	0		0	1	0	1	1	1.50
33	ELIDA	MITI	622976	8607749	0.50	1	0		0	1	0	1	1	1.50
34	LYDIA	HIKEMBE			2.00	4	0	Musakashi	0	1	0	1	1	1.00
35	FRANICS	SIKANYIKA			0.25	1	0	Kabanana	0	0	1	1	1	1.75
36	VERA	NAMUKONDA	620685	8609974	0.50	8	2	Kabanana	1	1	1	1	1.14	1.78
37	MAMBWE	MUZINGA	625746	860884	0.25	5	2	Kafue	1	1	0	1	0.97	1.69
38	OSWARD	BWALYA	625421	8608420	1.00	6	1	Kafue	0	0	1	1	0.62	0.24
39	KABUNGO	PROSPER	625915	8607893	1.00	2	0	Kafue	0	0	1	1	1.60	2.20
40	ROYD	TEMBO	622140	8612395	3.00	3	0	Lwanshimba	0	0	1	1	1.39	0.78

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
41	CHINYAMA	KAMBULO			0.00	1	0	Lwanshimba	1	0	0	1	4.63	9.26
42	STANLOUS				0.25	1	0	Kobvina	1	0	0	1	0.79	1.33
43	RAPHEAL	NGANDWE	621291	8611194	0.75	6	1	Kobvina	1	0	1	1	1.14	1.53
44	ANN	ONN	626034	8608384	0.00	1	0		1	1	0	1	0.97	1.94
45	CHOLA	CHISHIMBA			0.50	2	0	Lwanshimba	0	1	0	1	1.48	2.46
46	MFULA	MAGRET	616701	8611310	0.50	1	0	Lwanshimba	0	1	1	0	1.31	2.12
47	WAZWAMA	POTO			0.00	1	0	Sikanyika	1	0	1	1	3.94	7.88
48	MARTIN	MULENGA	620132	8606049	1.50	11	1	Nsofu	1	0	1	1	2.40	3.30
49	MWAMBA	REGINA			0.13	1	0		0	1	1	1	1.48	2.83
50	NELSON	MWANSA			1.75	4	0	Lwanshimba	0	0	1	1	0.97	0.19
51	BANDA	MATTA			0.88	5	1	Lwanshimba	0	0	1	1	0.97	1.06
52	OSCAR	NGANDWE			0.25	1	0	Lwanshimba	0	0	0	1	0.97	1.69
53	MBULO	DAVIS	616875	8610740	0.75	3	0	Lwanshimba	0	0	1	0	0.79	0.83
54	BENARD	KASONSO			3.50	7	0	Lwanshimba	0	0	0	1	1.14	-1.22
55	ENESS	CHINAMA			3.00	5	1	Lwanshimba	0	1	0	1	4.80	6.60
56	BENARD	MUSOLE			3.20	6	0	Lwanshimba	0	0	1	1	0.79	-1.62
57	KHABANGO	NTHANI			2.50	1	0	Kafue	0	0	0	1	4.63	6.76
58	MUYUNDA	MUYUNDA	619368	8608158	3.75	3	0	Nsofu	0	0	0	1	0.79	-2.17
59	IVOR	CHALANSI			0.75	1	0	Kafue	0	0	0	1	1.42	2.09
60	MUYUNDA	KAONGOLO			5.25	3	0	Nsofu	0	0	0	1	0.62	-4.01

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
61	MUNGA	MASIYE	620703	8606347	2.50	2	0	Nsofu	0	0	1	1	4.63	6.76
62	ALFRED	NDEKE			4.00	4	0		0	0	1	1	4.63	6.26
63	MARY	MBEWE	621632	8606615	1.75	4	0	Tubombeshe	0	1	1	1	1.60	1.45
64	ANNE	NGULIBE	621665	8606960	1.50	4	0	Tubombeshe	0	1	1	1	7.83	14.16
65	MAKADANI	NATHANI	621665	8606960	2.50	6	1	Tubombeshe	0	0	1	1	4.11	6.72
66	JANET	NATHANI	621575	8607429	5.45	4	0	Tubombeshe	0	1	1	1	4.80	4.15
67	ONLY	SINKENDE			1.00	5	0	Tubombeshe	0	0	0	1	0.97	0.94
68	DONALD	SUNGULA	619864	8606935	0.00	8	4	Nsofu	1	0	0	1	0.97	1.94
69	EMMY	NALWAMBA			1.88	4	0	Shangila	0	1	1	1	3.94	6.00
70	CINJENGE	CHARLSE			2.00	1	0		0	0	1	1	0.79	-0.42
71	VICTOR	CHAMA			1.25	5	0	Shangila	1	0	0	1	0.97	0.69
72	KASONGO	JOHN			5.00	2	0	Shangila	0	0	0	1	0.79	-3.42
73	PAUL	KAUNDA	623866	8610090	1.19	10	2	Kapolopolo	1	0	1	1	1.31	1.43
74	ANDREW	MUMBA	624412	8608850	2.63	5	0	Kapolopolo	0	0	1	1	1.31	0.99
75	ANDERSON	MUTINTA			0.00	3	0	Nsofu	1	0	0	1	2.40	4.80
76	LAZAROUS	INGWE			0.38	6	0	Nsofu	1	0	1	1	0.62	0.86
77	SEFELINO	NSOKOLO			15.00	10	3	Ntubeshe	0	0	0	1	0.79	-13.42
78	DIVINE	HAKAYOBO			0.75	5	1	Nsofu	0	1	0	1	1.14	1.53
79	ADRIAN	MUBANGA			0.50	7	1	Nsofu	1	0	0	1	0.62	0.74
80	CHIBANDA	JOSEPH	620043	8607178	2.25	7	3	Nsofu	0	0	1	1	0.97	-0.31

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
81	JACKSON	CHELA			1.70	2	0	Nsofu	0	0	1	1	0.97	0.24
82	MUMBA	EASTHER	616422	8610751	0.00	7	2	Luanshimba	1	1	1	0	0.62	1.24
83	SAMSON	BANDA			3.00	4	0	Luanshimba	0	0	0	1	1.66	0.32
84	MWELWA	EMMELIA	616835	8610436	3.00	6	1		0	1	1	0	0.71	-1.58
85	DAVIES	MUNDANDWE			0.00	1	0		1	0	0	1	1.83	3.66
86	MUNDANDWE	GEORGE			0.75	4	0		1	0	1	1	1.23	1.71
87	EDWINA	MUSONDA			0.75	7	0	Chimbamilonga	1	1	0	1	0.79	0.83
88	INNOCENT	MWABA			0.75	4	0	Kapolopolo	0	0	0	1	1.14	2.53
89	MULENGA	MWITABA	624527	8610348	2.00	1	0	Kapolopolo	0	0	1	1	4.97	8.94
90	LUKA	SIMFUKWE	624098	8609036	1.75	7	2	Kapolopolo	0	0	1	1	4.63	8.51
91	ANGULINA	MKANDAWIRE	623944	8608656	0.75	3	0	Kapolopolo	0	1	1	1	4.77	9.79
92	PETER	HANZOOMA	621827	8606827	2.50	3	0	Tubombeshe	0	0	1	1	0.80	0.10
93	CHAMBASUKU	KAZANGA			0.25	2	0	Kobvina	0	0	1	1	2.40	4.55
94	MARIAN	SOBONGO			0.88	10	0	Phiri	1	1	1	1	1.14	1.40
95	NGANDU	JULIAS	623439	8612905	6.00	8	2	Kobvina	0	0	1	1	2.40	-1.20
96	P SHIMISHI	ROBERT			0.00	1	0	Luanshimba	1	0	1	1	1.60	3.20
97	MUSANDA	GLADYS	615476	8608923	0.00	1	0	Luanshimba	1	1	1	0	3.20	6.40
98	SUSIKU	MANDANDWE	617061	8610991	0.00	1	0	Luanshimba	1	0	1	0	1.83	3.66
99	PRISCA	VENASE			0.50	6	1	Shangila	1	1	0	1	1.66	2.82
100	TRESFORD	CHIBWE			5.00	2	1	Luanshimba	0	0	1	1	4.28	3.56

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
101	MOSES	CHISHIMBA			3.00	3	0		0	0	0	1	3.20	3.40
102	TETUS	MWAPE			6.00	4	0	Luanshimba	0	0	0	1	1.31	-3.38
103	MOSES	MUPAKA			3.00	6	0	Luanshimba	0	0	0	1	0.62	-1.76
104	RIKA	CHILESHA			3.00	6	0	Kapolopolo	0	1	1	1	1.92	0.84
105	NSOFU	GRACE	624947	8610070	2.00	4	0	Kapolopolo	0	1	1	1	0.80	-0.40
106	NGOMA	MOSES			3.00	2	0	Kapolopolo	0	0	1	1	1.48	-0.04
107	JACKSON	KABULOGO	625018	8609820	2.00	3	0		0	0	1	1	1.60	1.20
108	LEONARD	MUNKONDYA			118.00	6	1	Kapolopolo	0	0	0	1	1.44	-115.12
109	GODINA	KASANGO			0.00	2	0	Sikanyika	1	0	0	1	4.37	8.74
110	MAJORY	CHIPANGA			1.75	5	0	Kobvina	0	1	1	1	0.62	-0.51
111	CHISAMBAULA	MORRIS			3.00	3	0	Shangila	0	0	1	1	0.88	-1.24
112	DINALESS	NAMUKONDA	619716	8609532	3.00	7	2	Shangila	0	1	1	1	8.00	13.00
113	SUSTONE	SICHONE			0.00	4	0	Luanshimba	1	0	0	1	1.14	2.28
114	VICTORIA	KATANJIKO	615197	8606884	0.55	11	0	Luanshimba	1	1	1	0	0.97	1.39
115	MUBANGA	EVANESS			0.30	6	1	Luanshimba	1	1	1	1	4.11	7.92
116	CHIBUYE	CATHRINE	615527	8607736	3.00	1	0	Luanshimba	0	1	1	0	1.79	0.58
117	BEATRICE	BANDA	615385	8608689	2.00	6	0	Luanshimba	0	1	1	0	0.62	-0.76
118	JINANA	MULAMBU	616890	8611109	0.45	10	2	Luanshimba	1	0	1	0	4.63	8.81
119	DAVIS	KAHILU	616543	8610171	0.30	6	0	Luanshimba	1	0	1	0	4.63	8.96
120	PETER	NGULUBE	622499	8610700	0.02	1	0	Luanshimba	1	0	1	1	0.62	1.22

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
121	LONGWE	CAPION			1.00	2	0	Tubombeshe	0	0	1	1	1.14	1.28
122	DORICA	MWANZA	622177	8607008	0.00	1	0	Tubombeshe	1	1	1	1	1.14	2.28
123	NOAH	SIKANYIKA	619591	8609575	6.01	7	3	Shangila	0	0	1	1	1.14	-3.73
124	PRISCILLA	WAKUMBA			3.06	10	2	Sikanyika	0	1	1	1	0.80	-1.46
125	EDD	KAKELE			3.13	2	0	Kobvina	0	0	0	1	1.83	0.53
126	JACKSON	NGALAMYA	622444	8613020	3.13	6	2	Kobvina	0	0	1	1	1.14	-0.85
127	JENIFER	MWELWA	616695	8611262	0.25	7	4	Luanshimba	1	1	1	0	2.40	4.55
128	COSMOS	CHISANGA	616844	8609534	2.00	7	0	Luanshimba	0	0	0	0	0.79	-0.42
129	JOSEPH	KAMIZHI	616827	8611185	1.00	4	0	Luanshimba	0	0	1	0	1.23	1.46
130	SEBASTIAN	MUTALE			1.05	5	2	Luanshimba	1	0	1	1	6.40	11.75
131	CRISTINE	KALELESI			0.05	10	3	Luanshimba	1	1	1	1	0.62	1.19
132	PATRICK	KAYIKO	624157	8609740	1.31	5	2	Kapolopolo	0	0	1	1	0.62	-0.07
133	SAMUEL	MACHISHI			1.00	4	0	Kapolopolo	0	0	1	1	0.62	1.24
134	PETER	KANUNGULU	624065	8609787	0.69	2	0	Kapolopolo	0	0	1	1	0.97	1.25
135	KELVIN	KAUNDA			0.31	2	0	Kapolopolo	0	0	0	1	1.60	2.89
136	COSMUS	MAYONDE	624313	8609840	3.25	5	0	Kapolopolo	0	0	1	1	2.40	1.55
137	FREDRICK	KAWANGA	623898	8606949	1.50	2	0	Chimbamilonga	0	0	1	1	3.20	5.90
138	SASTON	SICHONE			3.00	4	0	Luanshimba	0	0	0	1	4.63	6.26
139	MAILES	NAMONJE			3.00	5	0		0	1	0	1	4.63	6.26
140	FUNWELL	KUSALOKA			4.00	6	1	Luanshimba	0	0	0	1	3.94	3.88

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
141	CATHRINE	MUSONDA			14.00	10	2	Luanshimba	0	1	1	1	1.60	-10.80
142	JAMES	SIMUKONDA			0.88	4	0	Kapolopolo	0	0	0	1	2.40	3.92
143	LASTON	SINGOGO	624868	8610764	0.81	3	0	Kapolopolo	0	0	0	1	4.80	9.79
144	JOHN	KAOMA			1.75	3	0	Kapolopolo	0	0	0	1	0.62	-0.51
145	ESTELE	JUPISON	624343	8610071	2.50	4	0	Kapolopolo	0	1	1	1	1.83	2.16
146	BENARD	CHANDA	625908	8608087	0.88	3	0	Kapolopolo	0	0	0	1	2.40	3.92
147	RINGSON	CHOLA	0	0	1.00	7	1	Kapolopolo	1	0	1	0	4.63	9.26
148	TOMSON	MPANGANI	624267	8608700	0.88	3	0	Kapolopolo	0	0	0	1	0.62	1.36
149	FREDRICK	KAPIYA	0	0	1.88	5	0	Kapolopolo	0	0	1	0	1.00	1.12
150	FEONARD	MPANGANI	0	0	0.75	3	0	Kapolopolo	0	0	1	0	0.83	1.91
151	REUBEN	KAJIKO	623956	8609856	1.53	2	0	Kapolopolo	0	0	1	1	0.80	0.07
152	GEORGE	MUHUNGA	622067	8612290	0.50	2	0	Shangila	0	0	0	1	3.94	7.38
153	MAKONGO	NDOFU			0.83	10	0	Shangila	1	0	1	1	0.93	1.03
154	RABBECA	NDENGI			1.50	7	0	Shangila	0	1	1	1	0.83	0.16
155	MWANAUTA	VENAS			0.75	4	0	Shangila	0	1	0	1	0.63	0.51
156	MIYUIU	SAMUYOMBO	618763	8609131	0.63	1	0	Shangila	0	0	0	1	1.31	1.99
157	JONEVERA	MBAYI			0.63	7	0	Shangila	1	1	1	1	0.62	0.61
158	BISA	SIWILA			0.75	8	0	Sikanyika	1	1	1	1	5.60	11.45
159	MUNSHYA	BELIA			0.88	10	2	Sikanyika	1	1	0	1	4.67	8.46
160	FEBBY	NGANDU			0.25	4	0	Kobvina	1	1	1	1	1.60	2.95

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161	RUTHIAN	KAKELE			1.13	1	0	Kobvina	0	0	0	1	4.72	8.31
162	TIMOTHY	MUSONDA			0.25	5	3	Shagila	1	0	0	1	0.79	1.33
163	JUSTINE	KUNDA	621125	8610119	0.40	3	0	Kabanana	1	0	1	1	3.94	7.48
164	DAVID	NKANDU	622964	8611322	3.13	8	0	Kobvina	0	0	1	1	1.31	-0.51
165	MARY	MUSONDA	618076	8607553	0.10	4	0	Shagila	1	1	1	1	1.34	2.58
166	ALICK	MWALE			3.13	1	0	Kobvina	0	0	0	1	0.66	-1.81
167	ENOCK	MUSAMBA	620872	8612178	3.00	2	0	Sikanyika	0	0	1	1	1.52	0.04
168	JOHN	NKONDE	623187	8612163	3.13	6	1	Kobvina	0	0	1	1	1.31	0.49
169	DASON	SIAME			0.25	7	2	Shagila	1	0	1	1	1.10	1.95
170	OSWARD	KOMANI	618566	8608229	0.20	8	2	Shagila	1	0	0	1	0.83	1.46
171	THOMAS	CHISWEKA			6.50	6	0	Kobvina	0	0	0	1	4.80	3.10
172	HILDA	NAKAMBA			0.63	5	0	Shagila	1	1	1	1	1.66	2.69
173	AGNESS	NAMUBIZA	624044	8607741	1.00	11	3	Nsofu	1	1	1	1	4.63	8.26
174	BENSON	KABWE	615689	8608468	0.12	7	1	Luanshimba	1	0	1	0	4.63	9.14
175	FLORENCE	MWENI	615074	8608531	0.50	1	0	Luanshimba	0	1	1	0	7.14	13.78
176	TIMOTHY	MULENGA	624590	8608324	3.00	6	0	Kafue	0	0	1	1	8.00	14.00
177	GEOFFREY	KAPEMBWA			3.25	7	0	Kafue	0	0	1	1	1.23	-0.79
178	RAY	BANDA			1.00	1	0	Kafue	0	0	0	1	1.18	1.36
179	ANNA	KAMUNYAU	614762	8608370	0.25	11	0	Luanshimba	1	1	0	0	1.83	3.41
180	CHIPULO	ALBINA			2.00	6	3	Luanshimba	0	1	1	1	4.28	6.56

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181	JUSTINA	BWALYA			0.20	6	1	Luanshimba	1	1	0	1	1.23	2.26
182	SAPHILINYA	KUTUMBA			0.10	7	0	Shangila	1	1	1	1	1.31	2.52
183	FRED	MWILA			3.00	7	1	Shangila	0	0	0	1	1.23	-0.54
184	LISTER	SIMUKANGA			3.00	5	0	Kabanana	0	1	1	1	1.92	0.84
185	JOYCE	MUBANGA			2.63	7	3	Shangila	0	1	1	1	1.14	-0.35
186	DERRY	CHISENGA			8.00	11	2	Nsofu	0	0	1	1	1.68	-4.64
187	JOSEPH	MUKUKA			3.00	9	3	Silungwe	0	0	0	1	0.97	-1.06
188	MORGAN	CHISENGA	619663	8610036	0.20	2	0	Shangila	1	0	0	1	1.19	2.18
189	HARRYSON	CHIPWILA			3.00	6	0	Shangila	0	0	0	1	1.66	0.32
190	ALFRED	BWALYA			3.00	7	1	Shangila	0	0	1	1	1.14	-0.72
191	NYANGWA	MWABU			3.00	1	0	Shangila	0	1	0	1	1.06	-0.88
192	KATONGO	MUTAMBO			0.75	7	1	Kapolopolo	1	0	0	1	1.06	1.37
193	CHRISTINE	PETULU			0.38	4	0	Kobvina	1	1	0	1	1.14	1.90
194	WOMBA	SEBENTE			1.50	6	2	Shangila	0	1	1	1	1.23	0.96
195	FRANCIS	SIKANYIKA			1.38	7	1	Shangila	0	0	1	1	0.79	0.20
196	SOMBO	KANGOMBE			1.75	13	3	Shangila	1	1	1	1	1.40	1.05
197	ALFRED	MAKANGA	618770	8609595	1.00	6	0	Shangila	0	0	1	1	0.79	0.58
198	MONICA	CINJENGE			0.25	3	1	Shangila	1	1	1	1	0.90	1.55
199	MANDALENA	MUSONDA	627101	8608336	0.75	3	0	Kafue	0	1	1	1	4.72	8.69
200	LISKA	MUMBA	624929	8608154	2.00	6	3	Kafue	0	1	1	1	0.69	0.38

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201	AARON	KAMBOYI	616695	8611137	0.25	2	1	Luanshimba	1	0	0	0	0.80	235
202	JAMES	NSEBA	615986	8608446	2.00	5	0	Luanshimba	0	0	0	0	1.60	1.20
203	JOHN	CHIKONDE	615986	8609954	1.00	6	0	Luanshimba	0	0	1	0	4.72	8.44
204	HENRY	KAMANGA	614849	8608369	0.75	8	0	Luanshimba	1	0	0	0	0.79	0.83
205	WILSON	TANDILOKO	615792	8611065	3.00	3	0	Luanshimba	0	0	0	0	0.76	-1.48
206	CHUNGA	MWANSA			3.50	3	0	Luanshimba	0	0	1	1	4.80	6.10
207	COSTA	SINUNU			1.63	6	2	Luanshimba	0	0	1	1	1.06	0.49
208	MALEMBO	SIMULILO			3.00	1	0	Luanshimba	0	0	0	1	1.31	-0.38
209	WILLIAM	CHENGA	617096	8611429	0.88	7	2	Luanshimba	1	0	1	0	0.70	0.52
210	EDWARD	MAKALOU	616228	8610407	3.00	2	0	Luanshimba	0	0	1	0	0.97	-1.06
211	ALEX	KAPINGA			1.12	2	0	Luanshimba	0	0	1	1	4.63	8.14
212	STEPHEN	CHAMA	616885	8610955	0.25	1	0	Luanshimba	0	0	1	0	4.80	9.35
213	KACHEPA	NANCY			1.50	12	0	Luanshimba	0	1	1	1	1.31	1.12
214	SILVESTER	MULUMBWA	615915	8609170	1.00	4	1	Luanshimba	0	0	1	0	0.79	0.58
215	WEDDINGTON	NKOSI	616037	8609792	3.20	5	0	Luanshimba	0	0	1	0	3.94	4.68
216	PETER	SILUNGWE	617757	8609916	1.50	8	5	Silungwe	0	0	1	1	0.76	0.02
217	DINA	CHANZI			1.50	5	1	Silungwe	0	1	1	1	0.69	-0.12
218	JOSEPH	NDUMBA			0.25	2	0	Silungwe	0	0	0	1	4.63	9.01
219	FRANK	CHINYAMA			0.00	4	1	Silungwe	1	0	0	1	4.63	9.26
220	NASEL	CHIMBA			2.00	5	0	Silungwe	0	0	0	1	4.37	6.74

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221	BOSTON	CHANZI	617488	8609852	0.50	1	0	Silungwe	0	0	1	0	8.80	17.01
222	LEWIS	KAYOKOLO	621716	8611868	1.03	1	0	Kobvina	0	0	0	1	4.63	8.23
223	EVANS	MUSONDA	620397	8609054	2.00	2	0	Tubombeshe	0	0	0	1	0.76	-0.48
224	LAILA	MUSANJE	0	0	1.25	4	0	Tubombeshe	0	1	1	0	4.63	9.01
225	MUHANGA	BENARD	623150	8612878	0.00	1	0	Kobvina	1	0	0	1	4.63	9.26
226	CHANDA	EDWARD	623321	8612433	3.00	6	0	Kobvina	0	0	1	1	0.80	-0.40
227	NGANDU	ISAAC	623346	8612970	0.25	1	0	Kobvina	0	0	1	1	1.14	2.03
228	KELEBY	SIKAMBALE	622192	8612603	0.45	6	4	Kobvina	1	0	1	1	0.88	2.31
229	PLACHINI	SILWAMBA	0	0	0.60	5	2	Phiri	1	0	0	0	1.66	2.72
230	TISIYE	HARA	624086	8608146	0.25	5	0	Chimbamilonga	1	1	1	1	1.57	3.89
231	MWANGALA	TIMOTHY	624307	8608210	2.00	12	1	Chimbamilonga	1	0	1	1	1.83	2.66
232	BELITA	MSONYI	624146	8607720	0.75	4	0	Chimbamilonga	0	1	1	1	1.31	2.87
233	MATHEWS	MWITABA	627140	8608411	0.50	8	0	Kafue	1	0	0	1	0.79	1.08
234	MUZENJE	SAKALA	626185	8608203	0.50	7	4	Kafue	1	0	1	1	1.14	1.78
235	ALEX		625472	8607693	2.00	1	0	Kafue	0	0	0	1	3.94	5.88
236	GEORGE	CHINYIMBA	626093	8608504	0.33	10	1	Kafue	1	0	1	1	0.79	1.25
237	EDWARD	MWELWA	624800	8607979	3.00	6	0	Kafue	0	0	1	1	3.94	4.88
238	AMON	KATENDE	624854	8608428	3.00	5	0	Kafue	0	0	1	1	1.31	0.62
239	BEDWELL	KAULUMBA			3.25	6	1	Kafue	0	0	1	1	1.14	-0.97
240	ELVINA	SAKALIA			2.00	5	1	Kafue	0	1	0	1	2.40	2.80

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241	MUBANGA	ANDREW	621268	8609736	2.00	8	3	Kabanana	0	0	1	1	2.40	2.80
242	BANDA	RAPHAEL	620261	8610223	4.25	7	2	Kabanana	0	0	1	1	1.74	-0.77
243	NANYIRONGO	OLITA	620612	8609991	0.50	5	2	Kabanana	1	1	1	1	0.80	1.10
244	PHIRI	FLORENCE	621871	8610449	0.50	14	1	Kabanana	1	1	1	1	1.23	1.96
245	NAMBAYA	LOVENESS	620489	8609835	0.25	12	2	Kabanana	1	1	1	1	1.60	2.95
246	SIMWANZA	SUNDAY	624276	8607845	3.00	9	0	Chimbamilonga	0	0	1	1	1.39	0.78
247	WELLINGTON	MWANSA	622605	8613138	3.13	4	2	Kobvina	0	0	1	1	0.79	-1.55
248	SHAROTE	MUSOLE			0.75	2	0	Kobvina	0	1	1	1	1.66	2.57
249	ESTON	SIMBEYE			0.75	6	1	Kabanana	1	0	1	1	1.31	1.87
250	NAMUKWASA	VIOLET	620996	8610074	3.50	5	0	Kabanana	0	1	1	1	4.77	6.04
251	AGATHA	MUSONDA	623463	8612715	0.10	4	0	Kobvina	1	1	1	1	1.66	3.22
252	NGANDWE	DAVIES	621495	8612472	1.25	1	0	Sikanyika	0	0	0	1	1.66	3.07
253	NKOLE	FELIX	621532	8612010	0.30	1	0	Sikanyika	0	0	0	1	0.79	1.28
254	MWELWA	JOHANA	620935	8612956	0.20	6	0	Sikanyika	1	1	1	1	0.62	2.04
255	KABULAYI	CHIWAFAWA	621402	8611596	0.20	1	0		0	0	1	1	3.94	7.68
256	KACHANSA	MARY	624034	8608040	0.25	8	0	Sikanyika	1	1	1	1	0.97	1.69
257	MWANSA	MAKUNGO	618858	8608354	0.70	4	0	Shangila	0	0	0	1	1.33	1.96
258	MWANSA	MACDONALD	618858	8608354	0.45	9	1	Shangila	1	0	0	1	1.60	2.75
259	LAMBALINJI	BENJAMIN			0.25	9	1	Shangila	1	0	1	1	1.48	2.71
260	MWENYA	ROBINSON	618076	8606398	3.25	3	0	Shangila	0	0	0	1	0.62	-2.01

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261	SIMUKOKO	JOHN	624922	8609740	0.40	10	0	Shangila	1	0	1	1	4.63	9.86
262	CHIBWE	MATIAS	615425	8608859	0.25	12	0	Shangila	1	0	0	0	0.79	1.33
262	CHIBWE	MATIAS	615425	8608859	0.25	12	0	Shangila	1	0	0	0	0.93	1.61
264	EVARISTO	BWALYA	618294	8609591	0.88	4	1	Shangila	0	0	1	1	1.03	1,18
265	COSTINA	NAMWAYI			3.00	7	1	Shangila	0	1	1	1	0.79	-1.42
266	OLIPA	NAMFUKWE			0.25	3	0	Shangila	1	1	1	1	3.94	7.63
267	PASCAL	BWALYA			1.62	7	2	Shangila	0	0	1	1	1.14	0.66
268	SHADRECK	BENDULA			3.50	1	0	Shangila	0	0	1	1	0.97	-1.56
269	LAWRENCE	LYANONGA			2.00	3	0	Shangila	0	0	0	1	0.97	-0.06
270	MASAUUSA	GRACE			0.75	5	1	Shangila	0	1	1	1	0.80	0.85
271	NAMUSHI	KAKONGA			0.12	4	0	Shangila	1	0	1	1	0.85	1.58
272	ROBERT	MAKAYI			0.62	5	1	Shangila	1	0	1	1	4.63	8.64
273	ROSEMARY	CHILAMBWE			0.50	3	0	Shangila	0	1	0	1	4.63	8.76
274	DOROTHY	MUNSANDA	615074	8608610	2.38	7	1	Lwanshimba	0	1	1	0	4.80	7.22
275	MUMBA	VESTONE			3.00	2	0	Lwanshimba	0	0	0	1	3.94	4.88
276	MUZINGA	BERNADETTE			3.00	1	0	Lwanshimba	0	1	1	1	3.94	4.88
277	HILDAH	CHILANDO			0.50	11	4	Shangila	1	1	1	1	7.31	14.12
278	MISHECCK	KALUBA			0.00	3	0	Shangila	1	0	1	1	0.97	1.94
279	ENEST	CHITETA	618238	8609219	2.25	8	3		0	0	1	1	0.97	-0.31
280	EUNICE	NAKANYIKA			0.00	6	0	Siwanyika	1	1	0	1	0.79	1.58

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281	FELIX	MWENYA	622692	8610855	0.50	13	3	Kobvina	1	0	1	1	4.63	8.76
282	ALEX	MPOTOYI	622746	8610821	14.00	5	0	Kobvina	0	0	0	1	4.72	-4.56
283	RODAH	KAYOMBO			3.75	5	0	Kobvina	0	1	1	1	1.14	-1.47
284	JUSTIN	MFULA	623115	8612587	5.03	9	2	Kobvina	0	0	1	1	1.14	-1.75
285	WITNESS	MULAMBIA			10.02	5	0	Kobvina	0	0	0	1	4.97	-0.08
286	JANE	MUZALA	616755	8610910	5.00	2	0	Sikanyika	0	1	1	0	0.69	-3.62
287	LARSON	SAFILE			3.25	7	0	Sikanyika	0	0	1	1	1.48	0.71
288	SHADRICK	SEMECHI	620636	8612936	6.00	4	0	Sikanyika	0	0	1	1	0.83	-3.34
289	IDAH	MUNGANGA			1.00	9	0	Kafue	1	1	0	1	0.76	0.52
290	RICHARD	KACHIMBE	625788	8607724	0.75	6	1	Kafue	0	0	1	1	0.76	0.77
291	SPECIAL	PHIRI			6.13	7	1	Phiri	0	0	0	1	0.79	-4.55
292	JAMES	MUNYIKA			0.50	4	0	Silungwe	0	0	0	1	1.10	1.70
293	JESTERS	MUSONDA			3.00	3	0	Silungwe	0	0	0	1	0.93	-1.14
294	SIMON J	SIKOKI	620554	8611906	1.00	5	0	Phiri	0	0	1	1	0.79	0.58
295	POSTANI	PHIRI	620462	8612502	3.00	10	4	Phiri	0	0	1	1	2.40	1.80
296	JOSEPH	WAKAMBA	610404	8610404	3.00	6	2	Phiri	0	0	0	0	0.90	-1.20
297	EMMANUEL	YAVWA	620445	8611900	3.00	8	3	Phiri	0	0	0	1	0.79	-1.42
298	WILSON	MWAPE	620794	8612976	3.00	1	0	Phiri	0	0	0	1	0.79	-0.42
299	ESTER	MITI	620597	8612208	3.00	3	1	Phiri	0	1	1	1	1.23	-0.54
300	MULEY J	SHANYINDA			0.00	7	4	Phiri	1	0	0	1	4.63	10.26

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301	STEVEN	YAVWA	619970	8610782	1.51	5	0	Phiri	0	0	1	1	0.79	0.07
302	DAVID	MWINILUNGA			3.00	2	0	Lwanshimba	0	0	0	1	1.74	0.48
303	LANGENI L	MISHECK			0.52	5	0	Kapolopolo	1	0	0	1	0.80	2.08
304	KANSENGA C	LABAN			3.00	6	2	Kapolopolo	0	0	1	1	2.40	2.80
305	CHONGO	YOMBWE	621388	8609792	0.25	4	0	Kabanana	1	0	1	1	1.14	2.03
306	ELISON	NGAMBI	624370	8607655	2.00	6	0	Chimbamilonga	0	0	1	1	0.70	0.40
307	ENGLISH	ZULU	624169	8606853	1.25	5	0	Chimbamilonga	1	0	1	1	1.05	1.85
308	NSEBA	KABASO			10.00	5	0	Lwanshimba	0	1	0	1	0.97	-8.06
309	FEBBY	NAMUBIZZA	621472	8609809	5.00	5	0	Kabanana	0	1	1	1	4.20	3.40
310	HARRY	NYIMBILI	620693	8612906	3.00	2	0	Sikanyika	0	0	1	1	1.60	1.20
311	JOSEPH	MUSONDA	621058	8612890	3.00	1	0	Sikanyika	0	0	1	1	0.80	-0.40
312	SADOCK	MUNYENYEMBA	621376	8610206	5.00	2	0	Kabanana	0	0	1	1	0.97	-3.06
313	GOLDEN	KAHUDI	615765	8607606	3.13	2	0	Lwanshimba	0	0	1	0	0.62	-1.89
314	MARY	NAMFUKWE	615773	8610854	0.38	2	0	Lwanshimba	0	1	1	0	4.11	7.84
315	CHINYAMA	LENGENI			3.00	2	0	Lwanshimba	0	0	0	1	0.62	-1.76
316	NDOLA	MUYANABO			0.88	3	1	Lwanshimba	0	1	0	1	0.97	1.06
317	BORNIFACE	KASESA			0.75	1	0	Kabanana	0	0	0	1	4.00	7.25
318	MORGAN	KUNDA	624102	8610086	2.00	1	0	Kafue	0	0	0	1	5.15	8.30
319	BARTON	KATUTA	627719	8608645	1.50	2	0	Kafue	0	0	1	1	7.85	14.20
320	LEVY	MWILA	626269	8608080	4.00	3	0	Kafue	0	0	1	1	4.00	4.00

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
321	JAMES	MAKUMBA	627604	8608562	3.00	3	0	Kafue	0	0	0	1	1.60	0.20
322	ELIAS	MWANSA			2.00	2	0	Kapolopolo	0	0	1	1	4.80	8.60
323	MWANSA	KUNDA	624287	8609084	0.50	1	0	Kapolopolo	0	0	1	1	3.20	6.90
324	MUBUYAETA	NALISHEBO	624276	8607845	0.50	3	1	Chimbamilonga	0	1	1	1	1.31	3.12
325	CHAU	CHALA	624022	8606607	1.00	2	0	Chimbamilonga	0	0	1	1	1.14	2.28
326	KAONA	DOROTHY	624370	8607655	4.00	4	0	Chimbamilonga	0	1	1	1	5.60	7.20
327	NAMUYEMBA	AGNESS	624044	8607741	0.50	4	0	Chimbamilonga	1	1	1	1	0.97	2.44
328	SICHULA	JOE	624022	8606607	1.00	3	0	Chimbamilonga	0	0	0	1	2.40	4.80
329	KALOKI	JAMES	623611	8608150	0.25	3	0	Chimbamilonga	1	0	1	1	1.31	3.37
330	MOVISTER	MAMBWE			0.25	5	0	Sikanyika	1	0	1	1	4.63	9.01
331	MAKAI	JACKSON	616016	8610854	0.50	2	0	Lwanshimba	0	0	1	0	4.63	8.76
332	MUSONDA	ROSEMARY	621658	8612348	3.02	1	0	Sikanyika	0	1	1	1	4.63	6.24
333	ALAN	SOZA			10.13	3	0	Sikanyika	0	0	1	1	0.80	-8.53
334	JOHN	SIMUKOKO	624922	8609740	1.00	9	1	Kapolopolo	1	0	1	1	2.40	3.80
335	DAVID	MWANSA			1.00	9	1	Kabanana	1	0	1	1	0.62	0.24
336	THOMAS	MUSANKA	625696	8608160	2.00	7	0	Kafue	0	0	1	1	1.66	1.32
337	RODAH	SAKALA	626175	86080995	0.50	7	0	Kafue	1	1	1	1	1.60	2.70
338	MATEMBA	TERESA M	621183	8609714	1.25	8	0	Kabanana	0	1	1	1	0.98	0.71
339	SELIVA	SIMUWELU	620708	8609577	5.00	8	3	Kabanana	0	1	1	1	4.63	4.26
340	ROSEMARY	NSAKALIMBA			0.25	8	1	Kabanana	1	1	1	1	0.79	1.33

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
341	SHAKALIMA	MUPINGA			30.00	8	0	Lwanshimba	0	1	0	1	3.94	-22.12
342	PROSPER	KABUNGO JNR	625915	8607893	0.50	5	0	Kafue	1	0	0	1	1.48	2.46
343	MARY	CHIBUTA	625031	8609318	0.75	6	0	Kafue	0	1	0	1	4.00	8.25
344	VERONICA	BELYANI	621682	8610144	0.75	7	0	Kabanana	1	1	1	1	4.00	7.25
345	SIKANYIKA	WYSON	621646	8612320	30.00	6	1	Sikanyika	0	0	1	1	1.60	-26.80
346	LETSON	KACHASA	620935	8612814	0.20	8	1	Sikanyika	1	0	1	1	0.80	2.40
347	CHIPIPA L	NGOMBO	623879	8609856	2.00	6	1	Kapolopolo	0	0	1	1	1.60	1.20
348	LUKA	MUSONDA	622880	8612994	2.00	7	1	Chimbamilonga	0	0	1	1	1.60	2.20
349	KACHINKA	ELIZABETH	623958	8607872	1.00	10	0	Chimbamilonga	1	1	1	1	0.88	1.76
350	MAGGIE	KALYOLYO	624597	8607972	0.25	8	2	Kafue	1	1	1	1	1.60	3.95
351	MWESA	CONSTATINE	624331	8607537	2.25	16	3	Chimbamilonga	1	0	1	1	1.23	1.21
352	LISESA	IDAH	623840	8607026	2.00	7	1	Chimbamilonga	0	1	1	1	1.14	1.28
353	SIMUKOKO	WELIKOM	624272	8609060	1.00	6	0	Kapolopolo	0	0	1	1	0.80	1.06
354	KABASO	TADEO	624326	8608680	1.00	7	2	Kapolopolo	1	0	1	1	1.66	3.32
355	MULENGA	INKSON	623648	8607315	0.25	9	2	Chimbamilonga	1	0	1	1	2.40	5.55
356	MWILA	ELIZABETH			2.00	11	3	Chimbamilonga	0	1	1	1	2.40	3.80
357	MUTOLOKI K	DICKSON	624024	8609871	1.00	8	3	Kapolopolo	1	0	1	1	1.60	2.20
358	MWAPE	PANDE E	621070	8610095	1.25	12	1	Kabanana	1	1	1	1	0.97	0.69
359	MOSES	LUMAYI			1.00	9	1	Luanshimba	1	0	0	1	0.97	0.94
360	MATHEWS	MULENGA	617440	8611186	1.50	7	3	Luanshimba	0	0	0	0	1.31	1.12

Household number	Name 1	Name 2	Household location X	Household Location Y	Farm area, ha	Family members	Youth, 16-24 years	Zone of residence	Food insecure	Female headed household	Household Has Title	Access to Tier 1	Tier 1 allocations, number (1=0.25ha) (1=0.25ha)	Difference future allocation in rainfed land minus farm size in ha
361	JUSTINE	KABWE	620483	8612412	1.13	8	0	Phiri	0	0	1	1	3.20	5.27
362	CHARITY	MWANSA	621976	8612171	0.88	11	2	Sikanyika	1	1	1	1	0.97	1.06

16.2 APPENDIX A2: Additional Households Identified by PPSC

Land holder 2011: Farm number	Name 1	Name 2	NRC	Zone	Age	Sex	Family members	Farm Area, ha	Farm location in 2011 Register
	Sunford	Nyendwa		Kapolopolo Zone	43	M	7	126	
20901030245	Justine	Sichilima		Kapolopolo Zone	41	M	5		
	Nelson	Phiri		Kapolopolo Zone					
	Daniel	Mwale		Kapolopolo Zone	52	M			
	Ignatius	Luchembe	125118/63/1	Kapolopolo Zone	56	M	5		
	Gideon	Mwanza	465453/11/1	Kapolopolo Zone	44	M	4		
	Maxmillian	Mayumbelo	119188/63/1	Kapolopolo Zone	62	M	6		
	Tom	Chakama		Kapolopolo Zone	76	M	6		
	Biswell Justine	Banda		Kapolopolo Zone					
	Shurbert	Mumba		Kapolopolo Zone	43	M	4		
20901040237	Peter	Mukuka		Chimbamilonga Zone	62	M	1		
	Augustine	Kanchinka		Chimbamilonga Zone	22	M	5		
	John	Kuyanda		Chimbamilonga Zone	68	M	1		
	Benson	Botha	162169/68/1	Chimbamilonga Zone	73	M	3	15	
	Jane	Chintu		Chimbamilonga Zone		F			
	Christopher	Kalumba	181170/33/1	Kovina Zone	47	M	10		
	James	Bupe		Kovina Zone		M	8		
	Allus	Kasanda		Kovina Zone					
20901040003	John	Chavula		Kovina Zone	53	M	6		
	Febby	Bwalya		Kovina Zone	39	F	4		
20901030422	Damian	Chipango		Kovina Zone	78	M	8		
	Racheal	Nakamba		Kovina Zone	41	F	1		
	Leny	Chanda		Kovina Zone	51	M	7		
	George	Yande		Tubombeshe Zone	26	M	2		
	Happy	Simukoko		Tubombeshe Zone	43	M	8		
	Edward	Phiri		Tubombeshe Zone	43	M	6		
	Thomas	Mukubwe		Tubombeshe Zone	42	M	8	5	
20901040182	Charles	Mafwafwa		Tubombeshe Zone	40	M			

Land holder 2011: Farm number	Name 1	Name 2	NRC	Zone	Age	Sex	Family members	Farm Area, ha	Farm location in 2011 Register
	Hillary	Kasanga		Tubombeshe Zone					
	Jack	Kabwe		Tubombeshe Zone					
	Fredrick	Chipa		Nsofu Zone		M	8	1	
20901040081	Isaac	Mafuleka	384626/52/1	Nsofu Zone	43	M	6		
	Victor	Chama		Nsofu Zone	48	M	8	12	Shangila
	Fridah	Chileshe	126329/63/1	Nsofu Zone	54	F	5	12	
20901040283	Micheal	Munga		Nsofu Zone	32	M	3	5	
	Martin	Mulenga Jr		Nsofu Zone	45		5		
20901040289	Joseph	Nyhani		Nsofu Zone	52	M			
20901040290	Christine	Chama		Nsofu Zone	49	M	9	12	
20901040262	Philip	Banda		Nsofu Zone	48	M	8	13	
	Jack	Kabwe		Nsofu Zone	22	M	1		
20901040095	Precious	Mulundano		Nsofu Zone	45	F	4		
	Edward	Chishimba		Nsofu Zone	58	M	9	12	
	Anderson	Mutinta		Nsofu Zone					
20901040186	Muyunda	Kaongolo		Nsofu Zone					
20901030612	Molton	Muwowo		Phiri Zone	56	M	4		
20901030604	Victor	Chalwe		Phiri Zone	41	M	8		
	Matha	Kulelwa		Phiri Zone	55	F	5		
	Ruth	Yavwa		Phiri Zone	37	F	6		
	Laston	Chipulu		Phiri Zone	59	M	8		
20901030347	Thresa	Mwewa		Phiri Zone	62	F	9	3	Phiri
20901030260	Mario	Antonio		Phiri Zone	72	F	11		Shangira
20901030611	Ester	Nawila Musonda		Phiri Zone	30	F	4		
	Getrude Dinah	Nyangu		Phiri Zone	49		4		
	John	Ng'Ambi		Kafue Zone	62	M	8		
	Jenipher	Kumuchele		Kafue Zone	52	F	5		
20901040096	Agness	Mumba		Kafue Zone	32	F	7		Chimambilonga

Land holder 2011: Farm number	Name 1	Name 2	NRC	Zone	Age	Sex	Family members	Farm Area, ha	Farm location in 2011 Register
20901040256	Godffrey	Shilombe		Kafue Zone	51	M	8		
	Visto	Mpundu		Kafue Zone	61	M	6		
	Bornface	Kabwe		Kafue Zone		M	4		
	Joseph	Machayi		Kafue Zone	50	M	9		
	Kenndy	Chushi		Kafue Zone	33	M	1		
20901040217	Anna	Chiteta		Kafue Zone	38	F	6		
	Ivor	Chalansi		Kafue Zone	33	M	2	12	
	Mwansa	Elvis M		Lwanshimba Zone	50	M	5	3	
20901030188	Musonda	Dorothy Mulenga	165273/44/1	Lwanshimba Zone	50	F	7	3	
20901030225	Ngombo	Judith		Lwanshimba Zone	54	F	7	3	
20901030171	Mumba	Christine	199072/66/1	Lwanshimba Zone	52	F	5	3	
	Kana	Hildah Barnbas	141425/64/1	Lwanshimba Zone	69	F	4	3	
	Rogers	Kapembwa	305791/67/1	Lwanshimba Zone	40	M	4	3	
	Nakamala	Majory		Lwanshimba Zone	47	F	6	3	
	Frazer	Zulu	220066/66/1	Lwanshimba Zone	49	M	5	3	
20901030010	Bwalya	Mary	210718/65/1	Lwanshimba Zone	34	F	7	3	
	Molisa	Mugepuka		Lwanshimba Zone	70	F	5	3	
	Davies	Chiyengi	191354/65/1	Lwanshimba Zone	64	M	7	3	
	Kambeu	Silvia	354454/65/1	Lwanshimba Zone	22	F	5	3	
20901030104	Malan	Kashimbi		Lwanshimba Zone	50	M	9	3	
20901030164	Mulenga	Mary		Lwanshimba Zone	65	F	7	3	
	Billingsley	Siyangwe		Lwanshimba Zone	62	M	7	3	
20901030001	Dorothy	Aliphonso	148153/23/1	Lwanshimba Zone	53	F	9	3	
20901030239	Riness	Samukasa	158699/23/1	Lwanshimba Zone	51	F	10	3	
	Ndabila	Lukanga		Lwanshimba Zone	62	M	7	3	
	Elekiel	Banda		Lwanshimba Zone	56	M	4	10	
	Rossemary	Chilambwe		Lwanshimba Zone	53	F	6	3	
	Kanonga	Sainelo		Lwanshimba Zone	63	M	5	3	

Land holder 2011: Farm number	Name 1	Name 2	NRC	Zone	Age	Sex	Family members	Farm Area, ha	Farm location in 2011 Register
	Chalilusa	Ebson		Lwanshimba Zone	24	M	3	3	
	Jane	Muzanga	188644/62/1	Lwanshimba Zone	46	F	7	3	
	Maney	Kashionba		Lwanshimba Zone	29	M	2	3	
20901030041	Chinyama	Dickson	247651/67/1	Lwanshimba Zone	57	M	6	3	
	Shamputi	Joyce		Lwanshimba Zone	55	F	6	3	
20901030182	Clement	Musonda		Lwanshimba Zone	47	M	8	3	
	Kaoma Enock	Musonda		Lwanshimba Zone	62	M	12	3	
20901030007	Bwale	Grace		Lwanshimba Zone	60	F	6	3	
	Boias	Simukonda		Lwanshimba Zone	38	M	8	3	
	John	Chiluba		Lwanshimba Zone	60	M	15	5	
20901030579	Belia	Mulundu		Lwanshimba Zone	56	F	6	3	Silungwe
	Chanda Lovenss	Mwanza		Lwanshimba Zone	60	F	11	3	
20901030208	Emelia	Mwelwa		Lwanshimba Zone	59	F	12		
	Sunday	Ndau		Lwanshimba Zone	28	M	2	3.5	
20901030107	Hildah	Kaumba		Lwanshimba Zone	42	F	2	3	
20901040164	Mathias	Phiri		Kabanana Zone		M			
	Khabago	Nthani		Kabanana Zone		M			
	Sunday	Sikanyila		Kabanana Zone		M			
20901030356	Finess	Nakawala		Kabanana Zone	57	F	8		Shangira
20901040191	Besa	Mwila		Kabanana Zone	41	M	8	125	Tobombeshe
	Albert	Silungwe		Kabanana Zone		M			
20901040145	Francis	Muteba		Kabanana Zone		M			
	Judith	Nambeya		Kabanana Zone		F			
20901040138	Susan	Khondowe		Kabanana Zone		F			
	Siwale	Musiyani		Kabanana Zone	67	M	7	5	
20901040166	Fanwell	Sichilima		Kabanana Zone	75	M	8		
20901040154	Christine	Nambeye		Kabanana Zone	55	F	7	1	
	Vincent	Mubanga		Kabanana Zone	40	M	12	102	

Land holder 2011: Farm number	Name 1	Name 2	NRC	Zone	Age	Sex	Family members	Farm Area, ha	Farm location in 2011 Register
	Jane	Chinty		Kabanana Zone	45	F	5	5	
	Kenndy	Simuwela		Kabanana Zone					
20901030315	Enock	Maseka		Shangila Zone	67	M	1		
20901030395	John	Simukoko		Shangila Zone	69	M	8		
	Chijenge	Charles		Shangila Zone	52	M	15		
20901040240	Priscar	Mumba		Shangila Zone	49	F			Kafue
	Pamela	Nakamba	193373/47/1	Shangila Zone	40	F	7	5	
	Ernest	Chiteta		Shangila Zone	52	M	9		
20901030278	Christine	Chipanta		Shangila Zone	62	F	7	3	
	Hummphery	Kabwe		Shangila Zone	51	M	8	12	
	Grace	Mwansa		Shangila Zone	48	F	6		
	Mbwambo	Yava	163502/63/1	Silungwe Zone	40	F	3		
20901030577	James	Mulenga	204319/33/1	Silungwe Zone	60	M	10	4	
20901030600	Jimson	Siyyanda		Silungwe Zone	50	M	4		
20901030593	Maggie	Nkatya		Silungwe Zone	48	F	7		
	Bwalya	Chungu		Silungwe Zone	50	F	8		
20901030580	Midah	Munyika		Silungwe Zone	43	F	9		
	Silive	Sazeka		Silungwe Zone	54	M	7		
20901030219	Fidless	Nampungwe		Silungwe Zone	64	F	4		Luanshimba
20901030368	Dinala	Namwai		Silungwe Zone	56	M	8		Shangira
20901030234	Nyirenda	Golden	261560/51/	Silungwe Zone	38	M	8	3	Luanshimba
20901030082	Kalaluka	Ireen	122621/24/1	Silungwe Zone	55	F	7	3	Luanshimba
20901030588	Grace	Nalwimba	127362/65/1	Silungwe Zone	43	F	1	4	
20901030560	Augustine	Chimba		Silungwe Zone	34	M	9		
	Cecilia	Bwalya		Silungwe Zone					
20901030234	Golden	Nyirenda		Silungwe Zone					Luanshimba
	Faides	Mwanza		Sikanyika Zone	32	F	8		
	Peter	Mwanza	904403/67/1	Sikanyika Zone	58	M			

Land holder 2011: Farm number	Name 1	Name 2	NRC	Zone	Age	Sex	Family members	Farm Area, ha	Farm location in 2011 Register
	Sini	Kamwasha		Sikanyika Zone	53	F	8		
	Eness	Malunga		Sikanyika Zone		F	6		
20901030497	Charles	Chivinda		Sikanyika Zone	53	M	6		Kwashinyika
20901030538	Agila	Nakanika		Sikanyika Zone	34	F			Kwashinyika
20901030501	Dyson	Kafunda		Sikanyika Zone	56	M	2		Kwashinyika
	Grace	Nanwinga		Sikanyika Zone	38	F	5		
20901030549	Magrate	Sesa		Sikanyika Zone	50	F	13		Kwashinyika
	Tickness	Mkandawire		Sikanyika Zone	57	F	3		
	Matapo	Chunga		Sikanyika Zone	64	F	3		
20901030535	Colinus	Nachembe		Sikanyika Zone	51	F	3		Kwashinyika
	Oliver	Kayapatwa		Sikanyika Zone	44	M	8		
	Elias	Makaba		Sikanyika Zone	72	M	6		
	Rogers	Samakai		Sikanyika Zone	42	M	4		
20901030525	Jean	Muzala		Sikanyika Zone	65	F	9		Kwashinyika
20901040029	Hellen	Mayumbelo		Sikanyika Zone	35	F	5		Kapolopolo

16.3 APPENDIX B: Assets Compensation Matrix

16.3.1 Appendix B1: Asset Holders Displaced from Development Area

Census HHH number	Person number in Census	Valuation Number	Cadastral map Reference	Name	Located in Irrigation Block	Status of Asset holder	Value of fixed assets, ZMW	New house for HHH, ZMW	New house for HH (HHH not an asset holder)	New house for Un-identified asset holders, ZMW	Monetary compensation required, ZMW	X cord	Y cord
2	6	101	0	Oka Kasaka	6	HHH	32,220	55,000		-	-	621399	8612848
4	13	84	0	Lucy Samanana (L. Womba?)	5	HHH	19,000	55,000		-	-	0	0
5	15	93	-	Charles Mwansa	5	HHH	7,620	55,000		-	-	621976	8612171
9	37	79	67	Shadrick Mutoya	5	HHH	15,040	55,000		-	-	622922	8612760
10	43	92	-	George Muhanga	5	HHH	37,680	55,000		-	-	622067	8612290
12	55	39	0	Mary Chikopela	3	HHH	27,230	55,000		-	-	624773	8608438
25	125	53	-	Easter Banda	3	HHH	42,540	55,000		-	-	625102	8608001
26	126	55	-	Espina Mumba	3	HHH	900	55,000		-	-	626051	8608054
27	130	56	0	Moses Wamukwamba	3	HHH	47,300	55,000		-	-		
28	134	54	-	Bana Mwenge (Milika Kashimbaya)	3	HHH	4,690	55,000		-	-		
29	136	57	37	Enos Mugala	3	HHH	65,050	55,000		-	10,050	624832	8608606
30	148	14	-	Elizabeth Mapoma	2	HHH	10,610	55,000		-	-	624562	8607841
34	164	77	99	Lydia Hikembe	4	HHH	124,570	55,000		-	69,570		
40	190	83	72	Royd Tembo	5	HHH	2,700	55,000		-	-	622140	8612395
62	259	2	21	Alfred Kandeke/Foster Ndeke	1	HHH	231,892	55,000		-	176,892		
63	263	4	-	Mary Mbewe	1	HHH	28,505	55,000		-	-	621632	8606615
65	271	1	-	Makadani Ntani	1	HHH	66,120	55,000		-	11,120	621665	8606960

Census HHH number	Person number in Census	Valuation Number	Cadastral map Reference	Name	Located in Irrigation Block	Status of Asset holder	Value of fixed assets, ZMW	New house for HHH, ZMW	New house for HH (HHH not an asset holder)	New house for Un-identified asset holders, ZMW	Monetary compensation required, ZMW	X cord	Y cord
74	316	42	45	Andrew Mumba	3	HHH	54,210	55,000		-	-	624412	8608850
88	390	68	44	Innocent Mutale/Mwaba	3	HHH	2,150	55,000		-	-		
89	394	52	-	Mwitaba Mulenga	3	HHH	4,200	55,000		-	-	624527	8610348
89	394	76	-	Mwitaba Mulenga	4	HHH	4,910	55,000		-	-	624527	8610348
90	395	63	49	Luka Simfukwe	3	HHH	11,150	55,000		-	-	624098	8609036
91	402	49	0	Angeline Mkandawire	3	HHH	4,950	55,000		-	-	623944	8608656
92	405	3	-	Peter Hanzoon	1	HHH	27,730	55,000		-	-	621827	8606827
133	601		-	Samuel Machisi		PPSC valuation	9,000	55,000					
137	614	29	-	Kawanga Frederick	2	HHH	8,200	55,000		-	-	623898	8606949
143	645	78	61	Laston Singogo	4	HHH	201,180	55,000		-	146,180	624868	8610764
145	651	73	6	Estele Gibson	4	HHH	7,490	55,000		-	-	624343	8610071
147	658	71	-	Ringson Chola	3	HHH	11,600	55,000		-	-	0	0
148	665	41	40	Thompson Mpangani	3	HHH	13,520	55,000		-	-	624267	8608700
149	668	70	47	Frederick Kapiya Tandeo	3	HHH	9,450	55,000		-	-	-	-
150	673	60	-	Leonard Mpangani	3	HHH	5,340	55,000		-	-	0	0
158	709		-	Siwila Bisa		PPSC valuation	45,050	55,000					
168	755	89	-	John Nkonde	5	HHH	12,000	55,000		-	-	623187	8612163
176	806	58	31	Timothy Mulenga	3	HHH	4,720	55,000		-	-	624590	8608324
192	908	69	48	Mutambo Fred	3	son	2,150	-	55,000				

Census HHH number	Person number in Census	Valuation Number	Cadastral map Reference	Name	Located in Irrigation Block	Status of Asset holder	Value of fixed assets, ZMW	New house for HHH, ZMW	New house for HH (HHH not an asset holder)	New house for Un-identified asset holders, ZMW	Monetary compensation required, ZMW	X cord	Y cord
200	954	37	-	Lisca Mumba	3	HHH	15,570	55,000			-	-	-
201	960		8	Aaron Kamboyi		not yet valued		55,000					
224	1055		-	Laila Musanje		not yet valued		55,000					
226	1060	88	-	Edward Chanda	5	HHH	18,900	55,000			0	623321	8612433
228	1067	85	0	Keleby Sikambale	5	HHH	8,450	55,000			0	622192	8612603
230	1079	12	26	Nanniel Tisiye Hara	2	spouse	27,530	0	55,000		0	624086	8608146
231	1083	11	28	Timothy Mwangala	2	HHH	88,830	55,000			33,830	624307	8608210
232	1095	35	-	Belita Musonyi	2	HHH	28,830	55,000			0	624146	8607720
238	1131	38	0	Amon Katende	3	HHH	15,880	55,000			0	624854	8608428
246	1193	34	19	Sunday Simwanza	2	HHH	680,600	55,000			625,600	624276	8607845
252	1223	98	-	Davy Ngandwe	6	HHH	22,910	55,000			0	621495	8612472
254	1225	108	89	Joan Mwenya	7	HHH	32,450	55,000			0	-	-
254	1230	81	0	Cleopatra Ng,ndwe	5	Grandda ughter	3,050	0			3,050	620935	8612956
261	1265	66	122	John Simukoko	3	HHH	13,080	55,000			0	624922	8609740
284	1393	80	66	Justine Mfula	5	HHH	20,520	55,000			0	623115	8612587
287	1409	95	86	Larson Safeli	5	HHH	15,950	55,000			0		
288	1416	112	93	Shadreck Semechi	7	HHH	21,060	55,000			0	620636	8612936
288	1417	114	95	Sini Kamwasha	7	spouse	2,400	0			2,400	620636	8612936
298	1478	111	92	Wilson Mwape	7	HHH	13,340	55,000			0	620794	8612976
300	1482	106	89	Joel M. Sianyinda	7	HHH	65,390	55,000			10,390	-	-

Census HHH number	Person number in Census	Valuation Number	Cadastral map Reference	Name	Located in Irrigation Block	Status of Asset holder	Value of fixed assets, ZMW	New house for HHH, ZMW	New house for HH (HHH not an asset holder)	New house for Un-identified asset holders, ZMW	Monetary compensation required, ZMW	X cord	Y cord
303	1496	48	-	Misheck Langeni	3	HHH	3,900	55,000			0		
304	1501	62	-	Laban Chalwe	3	HHH	4,830	55,000			0		
306	1511	32	15	Elison Ng,ambi	2	HHH	32,920	55,000			0	624370	8607655
307	1517	21	-	English Zulu	2	HHH	29,110	55,000			0	624169	8606853
310	1532	113	94	Harry Nyimbili	7	HHH	10,950	55,000			0	620693	8612906
311	1534	107	128	Joseph Musonda	7	HHH	7,260	55,000			0		
322	1557	47	54	Susan Mwape	3	spouse	12,950	0	55,000		0		
323	1558	45	51	Mwansa Kunda	3	HHH	7,500	55,000			0	624287	8609084
324	1559	15	5	Nalishebo Mubuyaeta Muyayeka	2	HHH	30,162	55,000			0	-	-
325	1562	27	7	Chabu Chala (Bashi Chisenga)	2	HHH	25,830	55,000			0	624022	8606607
327	1568	33	0	Agness Namuyembe	2	HHH	8,350	55,000			0	624044	8607741
328	1572	19	-	Joel Sichula / Hilda Zulu	2	HHH	1,600	55,000			0	-	-
329	1576	6	24	Douglas Kaloki (James Kaloki Son)	2	son	2,100	0			2,100	623611	8608150
329	1575	5	-	James Kaloki	2	HHH	74,565	55,000			19,565	623611	8608150
343	1658	65	53	Mary Chibuta	3	HHH	3,600	55,000			0	625031	8609318
346	1677	97	0	Redson Kachasa	5	HHH	29,070	55,000			0	620935	8612814
348	1691	7	0	Luka Musonda	2	HHH	21,190	55,000			0	622880	8612994
349	1698	9	0	Elizabeth Kanchinka	2	HHH	35,150	55,000			0	623958	8607872

Census HHH number	Person number in Census	Valuation Number	Cadastral map Reference	Name	Located in Irrigation Block	Status of Asset holder	Value of fixed assets, ZMW	New house for HHH, ZMW	New house for HH (HHH not an asset holder)	New house for Un-identified asset holders, ZMW	Monetary compensation required, ZMW	X cord	Y cord
350	1709	22	24	Elias Masikini	2	spouse	1,280	0			1,280	624597	8607972
350	1709	13	-	Mr. Kalyolyo	2	spouse	13,970	0	55,000			624597	8607972
351	1716	16	14	Mwesa Constantine	2	HHH	47,392	55,000			0	624331	8607537
352	1732	26	9	Idah Kasesa/Lisesa	2	HHH	19,720	55,000			0	623840	8607026
353	1739	44	50	Welcome Simukoko	3	HHH	22,640	55,000			0	624272	8609060
354	1745	61	39	Tandeo Kabaso	3	HHH	29,060	55,000			0	624326	8608680
355	1752	36	13	Incson Mulenga	2	HHH	35,060	55,000			0	623648	8607315
356	1761	28	-	Mwila Elizabeth	2	HHH	14,950	55,000			0		
362	1816	102	126	Charity Mwansa	6	HHH	9,850	55,000			0	621976	8612171
362	1818	105	127	Pamela Kabango	6	daughter	3,000	0			3,000	621976	8612171
420	2161	10	-	Augustine & Mary Kanchinka	2	daughter	5,410	0	55,000		0	623958	8607872
421	2166	25	0	Mr. Kuyanda (John?)	2	HHH	960	55,000			0	-	-
422	2167	24	10	Peter Zulu/Mukuka	2	HHH	2,160	55,000			0	-	-
423	2168	8	-	Benson Bota	2	HHH	22,200	55,000			0	-	-
440	2232	20	22	Mr. Chushi (Kennedy?)	2	HHH	2,300	55,000			0	-	-
442	2242	40	38	John Ngambi	3	HHH	27,390	55,000			0	-	-
455	2348	110	0	Cleopatra Ng'ndwe/ Faides Mwanza	7	Granddaughter	3,350	0	55,000		3,350	620935	8612956
457	2364	109	87	UCZ Church/Peter Ndao	7	public building	10,050	0			10,050	-	-

Census HHH number	Person number in Census	Valuation Number	Cadastral map Reference	Name	Located in Irrigation Block	Status of Asset holder	Value of fixed assets, ZMW	New house for HHH, ZMW	New house for HH (HHH not an asset holder)	New house for Un-identified asset holders, ZMW	Monetary compensation required, ZMW	X cord	Y cord
458	2364	104	-	Eness Mulunga	6	HHH	23,700	55,000			0	-	-
459	2370	100	-	Agila Nakanyika	6	HHH	17,400	55,000			0	-	-
459	2370		-	Charles Chivinda/ Agila Nakanyika		PPSC valuation	3,500	55,000					
461	2376	116	96	Dyson Kafunda	7	HHH	6,000	55,000			0	-	-
469	2412	115	97	Colinius Nachembe	7	HHH	18,880	55,000			0	-	-
472	2421	94	0	Margret Sesa	5	HHH	12,900	55,000			0	-	-
473	2434	96	85	Grace Namwinga	5	HHH	0	55,000			0	-	-
474	2439	59	32	Jenipher Kamuchele (Bana Mulenga)	3	HHH	2,700	55,000			0	-	-
475	2444	64	0	Sunford Nyendwa	3	HHH	38,190	55,000			0	-	-
480	2467		-	Daniel Mwale		PPSC valuation	13,950	55,000					
481	2472	51	0	Justine Sichilima	3	HHH	1,500	55,000			0	-	-
484	2489	72	-	Nelson Phiri	4	HHH	118,770	55,000			63,770	-	-
485	2496	90	79	Mecia Chikunjiko	5	HHH	5,610	55,000			0	-	-
486	2504		71	Mary Ngandu		not yet valued		55,000					
487	2506	91	70	Grace Kakele	5	HHH	3,360	55,000			0	-	-
488	2512		63	Felix Nakaundu		not yet valued		55,000					
490	2516	82	77	Lenny Chanda	5	HHH	7,800	55,000				-	-
506	2623	87	68	Febbie Bwalya	5	HHH	8,000	55,000			8,000	-	-

Census HHH number	Person number in Census	Valuation Number	Cadastral map Reference	Name	Located in Irrigation Block	Status of Asset holder	Value of fixed assets, ZMW	New house for HHH, ZMW	New house for HH (HHH not an asset holder)	New house for Un-identified asset holders, ZMW	Monetary compensation required, ZMW	X cord	Y cord
		31	0	Community Shed	2	public building	11,600	0			11,600	-	-
		67	0	New Apostolic Church	3	public building	13,200	0			13,200	-	-
		17	43	No Name	2	not found	960	0		55,000		-	-
		46	56	Bana Banda	3	not found	5,700	0		55,000		-	-
		86	136	Ben Daka	5	not found	3,350	0		55,000		-	-
		18	-	Mr. Kaleya	2	not found	720	0		55,000		-	-
		23	0	Mulenga zulu	2	not found	800	0		55,000			-
		50	0	Unkown	3	not found	1,500	0		55,000		-	-
		43	0	Bupe Kambobe	3	not found	7,500	0		55,000		-	-
		103	0	Paul Mulula	6	not found	8,100	0		55,000		-	-
		75	0	Vera Kaunda	4	not found	11,900	0		55,000		-	-
		99	0	Bise Nawila	6	not found	43,050	0		55,000		-	-
		74	0	Jackson Mwape	4	not found	53,740	0		55,000		-	-
		30	0	Musakashi Diary Cooperation Union	2	public building	6,440	0			6,440	-	-

16.3.2 Appendix B2: Households Farming but Not Living in the Development Area

	HH number	Name 1	Name 2	Location	Approximate cultivated ha
1	438	Jane	Chintu	northern	3.2
2	432	Susan	Khondowe	northern	1.0
3		Ruth	Chiti	northern	2.0
4	438	Jane	Chintu	northern	1.8
5	59	Ivor	Chalansi	Southern	4.0
6	236	George	Chinyimba	Southern	3.0
7	200	Joseph	Machayi	Southern	2.3
8	444	Godfrey	Shilombe	Southern	1.8
9	476	Gideon	mwanza	Southern	1.9
10	478	Shurbet	mumba	Southern	2.2
11	482	Ignatius	Luchembe	northern	1.0
12		Edward	Chabansanga	northern	2.3
13		Chanka	Fewdays	northern	0.8
14		Lottie	Chinyanta	northern	3.0
15		Rose	Upite	northern	4.1
16		Betty	Sweta	northern	1.2
17		Dynes	Mwila	northern	1.9
18	483	Justine	Banda	northern	3.6
19	368	John	Chiluba	northern	2.2
20	398	Elvis	Mwansa	northern	1.6
21	524	Micheal	Munga	Southern	2.2
22	525	Fridah	Chileshe	Southern	1.0
23	529	Jack	Kabwe	Southern	1.6
24	20	Christopher	Musole	northern	2.1
25	464	Helen	Mayumbelo	northern	2.0
26	503	Grace	Nalwimba	northern	2.0
27	121	Longwe	Capion	Southern	1.0
28	122	Dorica	Mwanza	Southern	1.0
29	416	Thomas	Mukubwe	Southern	3.2
30	417	Happy	Simukoko	Southern	1.0
31	418	Edward	Phiri	Southern	2.0
32	419	George	Yamba	Southern	1.2
33	477	Maximillian	Mayumbelo	Southern	1.0
34	478	Bertha	Ngoma	Southern	1.0
35		Hillary	Kasanga	northern	1.0

16.3.3 Appendix B3: Farmers Associated with Cadastral Units

Red highlight=99 year lease, orange highlight=14 year lease

Reference number (see Cadastral Map)	Farm Area measured from Cadastral Map, ha	Affected Area, ha	% Affected	Persons Living inside Farm Area
1	94.03	-	0%	Wellingtone Nkosi Seduluka Zulu Fleza Zulu Nathan Chanda Grace Bwalwa Henry Chinyama Dumba Jeff Daka Wellington Chingala B Sinyangwe Bana Kondwani
2	118.14	-	0%	Dudith Ng'ombo Davies Chiengi Mary Mulenga Kaoma Musonda Gladys Musonda Dorothy Aluondo Beatrice Banda Dorothy Musonda Joyce Shamputu Kambeu Poster Sununu Born Nkunika Felix Mutepuka Nakana Benson Kombe Charity Kabaso JAMES Nseba Mafori Nakawala James Ruth Musonda
3	81.41	-	0%	Shakalina Zulu Patrick Bwalya Patrick Chilambwe
4	129.41	-	0%	Ezekiel Banda Henry Kamanga Ana Kamunyau Peter Phiri Shakalambo
5	70.03	-	0%	Bana Muthazi Majimela Astridah Masela Njobvu Kennedy Njobvu Vakoria Katajiko
6	152.14	-	0%	
7	138.36	-	0%	Tana Ellet Mwetwa
8 (9898)	91.23	-	0%	
9 (9896)	67.18	-	0%	Bana Chanda Bana Chiteta Enest Chiteta Felix Chiteta Bana Lenganya
10 (9890)	104.15	-	0%	Likwashi Oswald Komani Ferry Mwaamba Maseka Enock
11 (9908)	176.81	-	0%	Joseph Nthani
12 (9891)	117.34	-	0%	McDonard Mwansa Muyunda Joyce Kabwe Isaac Chibwe
13 (9892)	97.37	-	0%	Lackson Kabanda
14 (9893)	73.47	-	0%	
15 (9894)	76.81	-	0%	Boston Sianzi Sebastiano Mutale Nachakwa Maggie Nkatya
16	62.61	-	0%	Grace Nalisimba Febian Makasa Augustine Chimba
17 (9887)	158.15	-	0%	Noah Sikanyika Edina Namukonda Chrispine Chipanda Noah Musonda Phiri Chinjenje Miyutu Smayombo Christopher Musole
18	5.68	-	0%	Richard Sikachinga
19	5.62	-	0%	
20	5.63	-	0%	

Reference number (see Cadastral Map)	Farm Area measured from Cadastral Map, ha	Affected Area, ha	% Affected	Persons Living inside Farm Area
21	6.16	-	0%	
22	5.69	-	0%	Olita Nanyirogo Loveness Nambaya Chimba Sichilima
23	6.83	-	0%	Rams Sakalimba
24	6.15	-	0%	Vera Namukonda
25	4.85	-	0%	
26	5.35	-	0%	Davis Mukanga Violet Namukwasa
27	5.89	-	0%	Tiezer Makulata
28	5.93	-	0%	Esnart Mwape
29	4.82	-	0%	Yobo Chongo Justin Kunda
30	4.72	-	0%	
31	5.11	-	0%	Munyinda
32	5.96	-	0%	
33	6.11	-	0%	
34	6.50	-	0%	Funwel Sichilima
35	5.48	-	0%	
36	6.39	-	0%	
37	5.72	-	0%	
38	4.30	-	0%	
39	5.34	-	0%	
40	5.42	-	0%	
41	5.65	-	0%	
42	5.09	-	0%	
43	4.11	-	0%	
44 (9894)	75.81	17.80	23%	
45 (9895)	156.81	68.56	44%	Sadok Namunyenyebe Christine Nambela Veronica Beliani Febbie Namubiza Pump House Akabangile
46 (9896)	130.65	92.07	70%	BEsa Mwila

Reference number (see Cadastral Map)	Farm Area measured from Cadastral Map, ha	Affected Area, ha	% Affected	Persons Living inside Farm Area
47 (9897)	112.47	41.60	37%	
48	5.86	5.86	100%	
49	5.99	5.99	100%	Kapiya Tandeo
50	5.40	5.40	100%	Mutambo
51	5.81	5.81	100%	
52	4.30	4.30	100%	Luka Simfukwe Mwansa Kunda
53	4.59	4.59	100%	
54	5.22	5.22	100%	Welcome Simukoko
55	13.15	0.87	7%	Jackson Mwape
56	10.81	1.16	11%	Patrick Kajiko
57	12.40	1.51	12%	Morgan Kaunda Dickson Kanjengu Peter Kanyaugulu
58	13.97	1.79	13%	Paul Kaunda Reuben Kajiko
59	13.34	1.32	10%	Zulu Thom Chakani
60	12.16	0.36	3%	Chipipa Ngombo
61	9.52	-	0%	
62 (9899)	132.66	79.62	60%	Mulenga Mutaba Estele Gibson Grace Nsofu Cosmus Mayonde Stanford Nyendwa Mwape Mfula Jackson Kabungo John Simukoko Ricah Mumba Bana Banda Reuden Susan Mwape Mary Chibuta Standford Nyendwa
63	12.16	10.19	84%	Rinose Mugala
64	13.66	10.94	80%	John Ng'ambi
65	10.64	10.64	100%	Joseph Mpangani Tom Mpangani Tandeo Kabaso
66	8.74	8.74	100%	Nannie Hara
67	11.80	11.80	100%	Agness Namuyemba Elizabeth Kanchanka
68	9.57	9.57	100%	Angelin Mkandawire Benson Botha
69	10.83	10.83	100%	James Kaloki
70	10.56	10.56	100%	
71	8.57	8.57	100%	
72	9.76	9.76	100%	Timothy Mwangala

Reference number (see Cadastral Map)	Farm Area measured from Cadastral Map, ha	Affected Area, ha	% Affected	Persons Living inside Farm Area
73	10.88	10.88	100%	Bana Mulenga Timothy Mulenga
74	12.09	7.37	61%	Moses Sakamukwamba Mumba Amon Katenge
75	94.25	25.10	27%	Bana Mwenge Prisca Mumba Ester Banda Edward Mwelwa Bakalyolyo Jef Kapembwa Elizabeth Mapoma Kalumba Chongo Yotam Siame Agness Mumba Alex Bornface Kabwe Borehole
76	35.27	34.83	99%	Muwayeta Mwansa Kunda Elison Ng'ambi Mwesa
77 (9902)	155.50	108.23	70%	Lidia Hikeembe Maureen Mwape Kennedy Mwanza
78 (9903)	104.87	51.79	49%	Dorica Mwanza
79 (9904)	80.82	11.60	14%	Janet Nthani Makadani Nthani Peter Haazoma Mary Mbewe
80 (9905)	101.68	-	0%	Alfred Kandeke
81	10.01	-	0%	
82	9.52	-	0%	
83 (9906)	117.68	-	0%	Chibanda Joseph Sunkana Masiye Munga Fredrick Chipa
84	11.01	-	0%	
85	9.96	-	0%	
86	7.56	-	0%	
87	10.04	-	0%	
88	8.40	-	0%	
89	8.09	-	0%	
90	9.46	-	0%	
91	8.18	-	0%	
92	8.37	-	0%	
93	9.97	-	0%	
94	10.27	-	0%	Isaac Lupipa Martin Mulenga
95	11.31	-	0%	
96	9.44	-	0%	
97	9.55	-	0%	Chisenga
98	9.67	-	0%	

Reference number (see Cadastral Map)	Farm Area measured from Cadastral Map, ha	Affected Area, ha	% Affected	Persons Living inside Farm Area
99	11.50	-	0%	Paul Chela
100	11.15	-	0%	Donard Sungula

16.4 APPENDIX C: History of Land Transactions in Farm 4288 (SADA)






Entry number	Title Holder	Nature of document	Certificate of title number	Property number	Area (ha)	Document date	Registration Date	Lease starts	Lease ends
1	Inambao Nathaniel Nawa	14 Year lease		F/9894		12-Oct-04	13-Oct-04	01 August 2004	29 July 2018
2	Inambao Nathaniel Nawa	Certificate of Title	32540	F/9894	77	12-Oct-04	13-Oct-04	01 August 2004	29 July 2018
1	Vincent Mubanga	14 Year lease		F/9895		08-Feb-02	11-Feb-02	01 December 2001	28 November 2015
2	Vincent Mubanga	Certificate of Title	4938	F/9895	117	08-Feb-02	11-Feb-02	01 December 2001	28 November 2015
1	Mulapesi Iilonga Catherine	14 Year lease		F/9896		08-Feb-02	11-Feb-02		
2	Mulapesi Iilonga Catherine			F/9896	125	08-Feb-02	11-Feb-02	01 August 2004	29 July 2018
3	Mulapesi Iilonga Catherine	Surrender Deed		F/9896		13-Jul-04	13-Jul-04		
4	Zimba Mwila Besa	14 Year lease		F/9896		24-Jul-06	25-Jul-06		
5	Zimba Mwila Besa	Certificate of Title	53248	F/9896	115	24-Jul-06	25-Jul-06	01 August 2004	29 July 2018
1	Nyenda Sunford	14 Year Lease	59711	F/9899	126	19-Feb-07	19-Feb-07	01 June 2003	28 May 2017
2	Nyenda Sunford			F/9899		19-Feb-07	19-Feb-07		
3	Nyenda Sunford	Surrender Deed		F/9899		20-Apr-11	20-Apr-11		
4	Nyenda Sunford	99 Year Lease		F/9899	98.565	19-Jun-12	19-Jun-12	01 September 2011	08 August 2110
5	Nyenda Sunford	Certificate of Title	164807	F/9899	98.565	19-Jun-12	19-Jun-12	01 September 2011	08 August 2110
1	Inambao Nathaniel Nawa	14 Year Lease	4939	F/9897	116	08/02/2002	11/02/2002	01 December 2001	28 November 2015
2	Inambao Nathaniel Nawa			F/9897		08/02/2002	11/02/2002		
3	Inambao Nathaniel Nawa	Surrender Deed		F/9897	0	13/07/2004	13/07/2004		
4	Sikapoko Stephen	14 Year Lease	35248	F/9897	110	20/01/2005	20/01/2005	01 August 2004	29 July 2018
4	Sikapoko Stephen	Certificate of Title	35248	F/9897	110	20/01/2005	20/01/2005	01 August 2004	29 July 2018
1	Kampamba Liness	14 Year Lease		F/9911	141	27/05/2009	27/05/2009		
2	Kampamba Liness	Certificate of Title	86292	F/9911	100	27/05/2009	27/05/2009	01 August 2004	29 July 2018
1	Hikeembe Lydia	14 Year lease		F/9902	158	01/04/2005	01/04/2005	01 June 2003	08 January 2017
2	Hikeembe Lydia	Certificate of Title	37007	F/9902	0	01/04/2005	01/04/2005		
3	Hikeembe Lydia	Deed of Surrender		F/9902	147.1477	20/04/2011	20/04/2011		
4	Hikeembe Lydia	99 Year Lease	164686	F/9902	147.1477	19/06/2012	19/06/2012	01 September 2011	08 August 2110
5	Hikeembe Lydia	Certificate of Title	164686	F/9902	147.1477	19/06/2012	19/06/2012	01 September 2011	08 August 2110
1	Banda Moses	14 Year lease		F/10390	100	24/03/2006	24/03/2006	01 September 2006	28 August 2020
2	Banda Moses	Certificate of Title	48694	F/10390	166	24/03/2006	24/03/2006	01 September 2006	28 August 2020
1	Hanzooma Peter Hanli	14 Year lease	20465	F/9903	106	20/08/2003	20/08/2003	01 August 2003	28 July 2017
2	Hanzooma Peter Hanli	Certificate of Title	20465	F/9903	106	20/08/2003	20/08/2003	01 August 2003	28 July 2017
1	Chisoko Gilbert	14 Year lease		F/9904	80	18/12/2001	18/12/2001	01 December 2001	28 November 2015
2	Chisoko Gilbert	Certificate of Title	3594	F/9904		18/12/2001	18/12/2001	01 December 2001	28 November 2015
3	Chisoko Gilbert	Surrender Deed		F/9904	0	14/07/2004	14/07/2004		
4	Nthani Janet	14 Year lease		F/9904		19/02/2007	19/02/2007	01 August 2004	29 July 2018
5	Nthani Janet	Certificate of Title	59714	F/9904	82	19/02/2007	19/02/2007	01 August 2004	29 July 2018
1	Sichone Millan	99 Year Lease		F/9908		20/08/2003	20/08/2003	01 August 2003	08 July 2102
2	Sichone Millan	Certificate of Title	20448	F/9908	206	20/08/2003	20/08/2003	01 August 2003	08 July 2102
1	Sichone Millan	14 Year lease		F/9905	100	18/12/2001	18/12/2001	01 December 2001	28 November 2015
2	Sichone Millan	Certificate of Title	3595	F/9905	0	18/12/2001	18/12/2001	01 December 2001	28 November 2015
3	Sichone Millan	Surrender Deed		F/9905	0	14/07/2004	14/07/2004		

ID (NRC)	Applicant Number	Nature of document	Application number	Property number	Area (ha)	Lease Date	Offer Date	Accepted	In irrigation block
443739/11	Oliver Mwale	99 Year Lease	153400	F/9910	?	01/12/2012	01/12/2012	Yes	no
437399/52	Masiye Munga	14 Year Lease	81734	F/9906	126	01/08/2004	13/08/2004	Yes	no
231789/82	Muyunda Muyunda	14 Year Lease	72805	F/9891	100	01/06/2003	23/06/2003	Yes	no
170362/15	Ntalasha Lubambe	14 Year Lease	72801	F/9892	100	01/06/2003	23/06/2003	Yes	no
255429/82	Kaongolo Muyunda	14 Year Lease	72803	F/9893	100	01/06/2003	23/06/2003	Yes	no

16.5 APPENDIX D: 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.

16.5 APPENDIX E: Minutes of the Public Disclosure Meeting

Following announcements in the *Zambian Press* and extensive preparation, the RAP for Musakashi was presented by the Team Leader CP&CB Provider and the Resettlement Specialist CP&CB Provider at the RAP Public Disclosure Meeting held at ZARI (2 km from the Musakashi site) on 16th May 2014. About 166 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, 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 Musakashi 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 Musakashi 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:
 - 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 cut-off date of the RAP is 7th September 2013.
- 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 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.

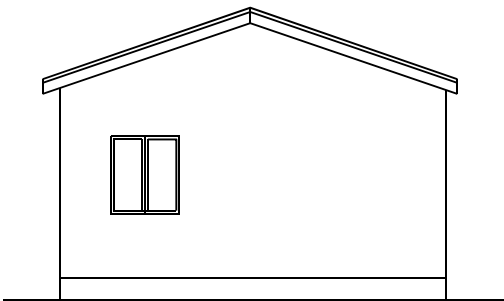
Questions and comments by the public attending the meeting on the proposed RAP are summarized as follows:

- People living in the west part of Musakashi would have a house plot to settle on, if they decide to move closer to the tier 1? Who will decide that?
 - CP&CB Team Leader: It is not included in the RAP, because they are not directly affected, but they will benefit an irrigation plot as will all the community members. Rainfed land has to be distributed by the local authorities.
- Will a re-planning of the block be done for people living in the west?
 - Council Representative: The question is taken in account. The office of the local government and the DACO will collect the data and plan that. It will be done in few weeks or months.
- Will the squatter farmers, who were never allowed to build house, be compensated?
 - CP&CB Team Leader: If there is no house in his farm, the project cannot compensation him with a house. The rule is this case is “the land for land”.
- Is something is intended to improve domestic water access, which is a real concern in the area?
 - CP&CB Team Leader: the resettlement plan anticipates access to domestic water for households who will be resettled,
 - National Project Coordinator: A provision is planned for potable water.
- Area councilor: The project will attracted people from outside Musakashi and the farmers will need to sell their products easily. Will it be possible to build a foot bridge across the Kafue?

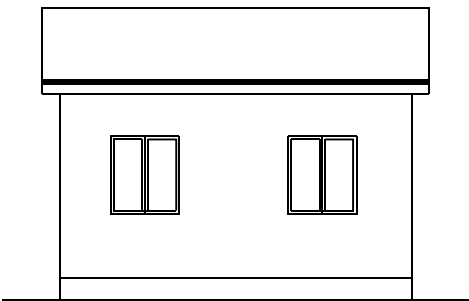
- National Project Co-ordinator: Yes that would be needed and a plan is a place for a foot bridge in the same time of the roads construction.
- What happens for households which are not captured in the census? Or captured but not with the right name?
 - CP&CB RAP Specialist: PPSC must capture this information and pass it on to Lusaka. The process is going on,
 - PPSC member: We are currently validating the data. But we cannot go everywhere and check door to door. That is why we are organizing meetings zone by zone and some people don't come. *(Note that the result of the data validation exercise is included in this report.)*.
- A farmer asked if they can go ahead and do their normal farming this year.
 - National Project Co-ordinator: Farmer should continue farming as always and will be informed in good time when this should be stopped.

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

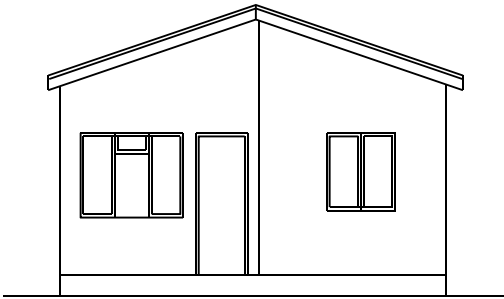
16.6 APPENDIX F: Low Cost House Design



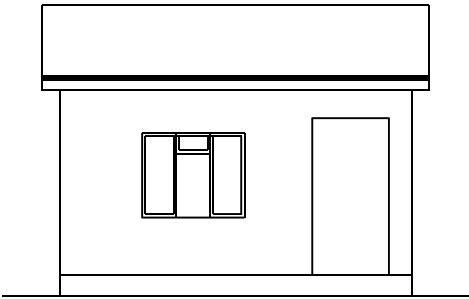
FRONT ELEVATION



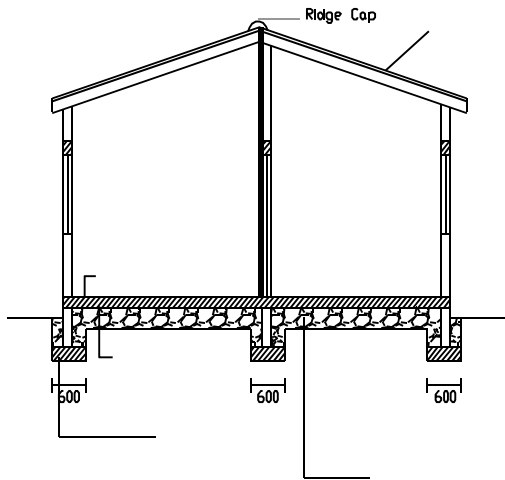
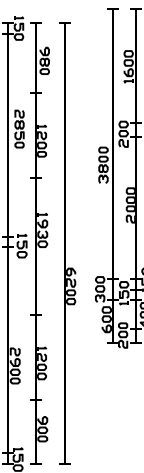
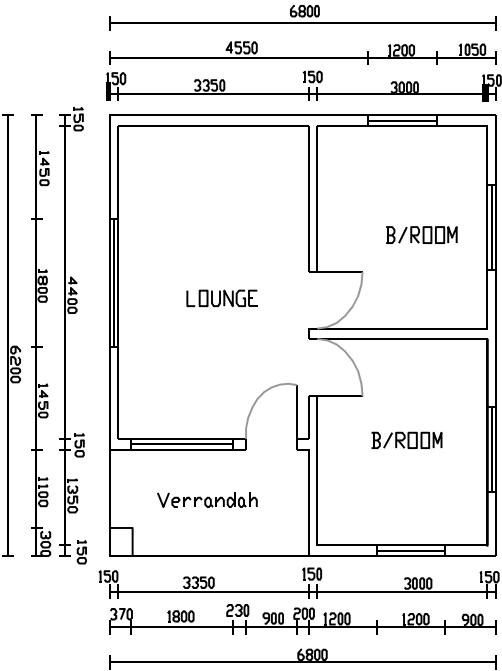
RIGHT SIDE ELEVATION



BACK ELEVATION



LEFT SIDE ELEVATION



PROPOSED QUARTERS FOR IDSP

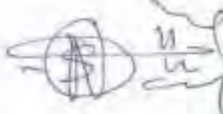
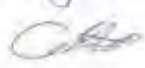

16.7 APPENDIX G: Signed List of Affected Persons and Scoping Meetings

Signatures of Affected Household Heads at the Musakashi 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. No attendance lists are available.

The following list of affected persons is signed by the zone leaders, the PPSC Chairman and the Site facilitator. The list contains all the Household heads of the project area.

List of affected people - Musakashi						
Musakashi atombe	NAME	NAME	Sex	Age	Edred mnc	Zone
	Thomas	Mukubwa	m		21364/16/1	Tutombeshe
	ZONE LEADER					
	PPSC CHAIR					
	SITE FACILITATOR					
12	Mary	Chikopele	F	65	12133/26/1	Kafue
13	Whyson	Ngambi	M	70	139422/47/1	Kafue
14	Agness	Mumba	F	41	228796/66/1	Kafue
16	Loveness	Mumba	F	46	209874/66/1	Kafue
25	Ester	Banda	F	46	0	Kafue
26	Espina	Mumba	F	45	197521/66/1	Kafue
27	Moses	Wamukwamba	M	60	176336/82/1	Kafue
28	Milicah	Kashimbaya	F	48	169920/66/1	Kafue
29	Enos	Mugala	M	64	154635/66/1	Kafue
30	Elizabeth	Mapoma	F	65	265060/33/1	Kafue
31	Yoram	Siame	M	77	139422/47/1	Kafue
37	Mambwe	Muzinga	F	59	160560/66/1	Kafue
38	Oswald	Biwalya	M	44	165363/45/1	Kafue
39	Kabungo	Prosper	M	63	123211/66/1	Kafue
59	Ivor	Chalansi	M	35	670093/11/1	Kafue
146	benard	chanda	m	60	195680/66/1	Kafue
147	ringson	chola	m	59	113134/12/1	Kafue
176	timothy	mulenga	m	78	132674/66/1	Kafue
177	geoffrey jnr	kapembwa	m	28	902125/66/1	Kafue
178	ray	banda	m	35	301673/66/1	Kafue
199	mandalena	musonda	f	50	202888/66/1	Kafue
200	liska	mumba	f	41	184621/16/1	Kafue
233	mathews	mwitaka	m	31		Kafue
234	muzenje	sakala	m	63	222442/61/1	Kafue
235	Alex		m			Kafue
236	George	Chinyimba	m	48	228709/66/1	Kafue
237	edward	mwelwa	m	74	10125386/1	Kafue
238	Amon	Katenda	m	57	125504/61/1	Kafue
239	chongo	kaulumba	m	65	189983/33/1	Kafue
240	Enla	sakala	f	65	133037/66/1	Kafue
289	Idah	Munganga	f			Kafue
290	Richard	Kachimbe	m	52	346327/65/1	Kafue
318	Morgan	kunda	m	50		Kafue
319	Burton	Katuta	m	62	116692/64/1	Kafue
320	Levy	mwila	m	60	146365/30/1	Kafue
321	James	Makumba	m	56	175294/68/1	Kafue
336	Thomas	Musenka	m	55	106925/76/1	Kafue
337	Rodah	Sakala	f	30	285207/66/1	Kafue
342	Prosper	Kabungo jnr	m	38	111232/66/1	Kafue
343	Mary	Chibuta	f	58	182411/66/1	Kafue
350	Maggie	Kalyolyo	f	48	137869/65/1	Kafue
439	visto	mpundu	m	61	129405/33/1	Kafue
440	Kennedy	chushi	m	33		Kafue
441	Joseph	Machayi	m	50		Kafue
442	John	ngambi	m	62		Kafue

Chairperson - Simford Nyandwa 
Vice Chairperson - 


List of affected people - Musakashi						
Household number	NAME	NAME	Sex	Age	Current IDP	Zone
	JOSEPH	Mukuka			199967/67/1	Shangila
	Benjamin	Lambalini				Shangila
	Timothy	Makina			126087/23/1	Shangila
	George	Simbwa			148141/65/1	Shangila
	Doris	Munzenzi			147426/21/1	Shangila
	Joyce	Mwansa			192624/65/1	Shangila
	Sela	Nachalwe			139765/65/1	Shangila
	Harriet	Nanyangwe			898696/11/1	Shangila
	Janet	Mbimbi			124409/23/1	Shangila
	Ndengi	Lanisi			126434/23/1	Shangila
	Remmy	Mulundu			150448/33/1	Shangila
	Mwewa	Bwalya				Shangila
	STEPHEN	Chalwe			154768/65/1	Shangila
	Aaron	Mwale			175070/52/1	Shangila
	REUBEN	Mushi			130441/64/1	Shangila
	Misheck	Kaluba			202188/65/1	Shangila
	Yizzy	Phiri			189462/68/1	Shangila
	Robby	Mwansa				Shangila
	Newton	Ngosa				Shangila
	Musonda	Kaluba				Shangila
	RHODA	LUPUYA			152502/66/1	Shangila
	RUSIE	MWALIMU			176821/64/1	Shangila
	ZONE LEADER	SIMFORD NGENDWA				
	PPSC CHAIR	SIMFORD NGENDWA				
	SITE FACILITATOR	SIMFORD NGENDWA				
	Kasaka	Ok	M	60	114744/65/1	Sikanyika
	Edward	Kayuma	M	42	285298/66/1	Sikanyika
2	Timothy	Markin	M	73	126087/23/1	Sikanyika
17	Wazwama	Poto	M	57	1210861/25/1	Sikanyika
21	godina	kasango	m	46	178358/32/1	Sikanyika
47	priscilla	wakumba	f	36	261426/66/1	Sikanyika
109	bisa	siwila	f	44	177675/47/1	Sikanyika
124	munshya	belia	f	64	151839/66/1	Sikanyika
158	ngandwe	davies	m	34	169188/63/1	Sikanyika
159	mwewa	joan	f	58	198560/67/1	Sikanyika
252	kachansa	mary	f	32	204917/65/1	Sikanyika
254	Jane	Muzala	f	36	223971/67/1	Sikanyika
256	lason	safeli	m	40	248150/66/1	Sikanyika
286	Shadreck	semegi	m	63	122593/23/1	Sikanyika
287	Wilson	Mwape	m	63	184953/33/1	Sikanyika
288	harry	nyimbili	m	78	114260/47/1	Sikanyika
298	joseph	musonda	m	60	169349/66/1	Sikanyika
310	Movister	Mambwe	m	29	296641/66/1	Sikanyika
311	musonda	rosemary	f	54	175046/68/1	Sikanyika
330	alan	soza	m	54	121476/22/1	Sikanyika
332	Sikanyika	wayison	m	70	100933/47/1	Sikanyika
333	ledison	Kechasa	m	75	116015/63/1	Sikanyika
345	Charity	Mwansa	f	39	272030/64/1	Sikanyika
346	faides	mwanza	f	32		Sikanyika

W. SIKANYIKA W.

W. SIKANYIKA W.

Chairperson: Simford Ngendwa

List of affected people - Musakashi						
Household number	NAME1	NAME2	Sex	Age	ID No / PIC	Zone
391	Fraser	Zulu	m	49	220066/66/1	Luanshimba
392	Nakauala	Majory	f	47		Luanshimba
393	Rogers	Kapembwa	m	40	305791/67/1	Luanshimba
394	Kana	Hildah bambas	f	69	141425/64/1	Luanshimba
395	Mumba	Christine	f	52	199072/66/1	Luanshimba
396	N'gombe probably	Judith	f	54	129843/65/1	Luanshimba
397	musonda	Dorothy Muleng	f	50	165273/44/1	Luanshimba
398	Mwanta	Elvis m	m	50		Luanshimba
	ZONE LEADER					
	PPSC CHAIR					
	SITE FACILITATOR					
1	Rosemary	Chipa	F	49	197920/32/1	Nsofu
48	Matini	Mulenge	M	65	122167/66/1	Nsofu
58	Muyunda	Muyunda	M	41	0	Nsofu
60	Muyunda	Kaongolo	M	40	0	Nsofu
61	Munga	Masiye	M	41	437399/52/1	Nsofu
68	donald	sungula	m	50	156395/62/1	Nsofu
75	anderson	mutinta	m	49	143301/15/1	Nsofu
76	lazarous godfrey	Ingwe dabali	m	39	110419/55/1	Nsofu
78	divine	hakayobo	f	32		Nsofu
79	adrian	mubanga	m	75	111097/63/1	Nsofu
80	chibanda	Joseph	m	62	132737/44/1	Nsofu
81	Jackson	chela	m	78	106731/65/1	Nsofu
173	agness	namubiza	f	50	203815/67/1	Nsofu
186	derry	chisenga	m	69	112483/65/1	Nsofu
520	victor	chama	m	48		nsofu
521	isaac	mafuleka	m	43	384626/52/1	nsofu
522	frederick	chipa	m			nsofu
523	Joseph	nthani	m	52		nsofu
524	micheal	munga	m	32		nsofu
525	fridah	chileshe	f	54	126329/63/1	nsofu
526	martin	mulenga Junior	m	45		nsofu
527	chrisante	chama	m	49		nsofu
528	philip	Banda	m	48		nsofu
529	jack	Kabwe	m	22		nsofu
530	precious	mulundano	f	45		nsofu
531	Edward	Chishimba	m	58		nsofu
77	sefelino	nsokolo	m	55	237427/67/1	Tubombeshe
94	marian	sobongo	f	35	211647/32/1	Phiri
167	enock	musamba	m	45	207510/66/1	Phiri
229	pladhini	silwamba	m	31	336080/66/1	Phiri
291	Special	Phiri	m	68	199531/11/1	Phiri
294	Simon J	Sikoki	m	92	164881/86/1	Phiri
295	Postani	Phiri	m	69	231586/67/1	Phiri
296	Joseph	Wakamba	m	50	285293/66/1	Phiri
297	Emmanuel	Yavwa	m	60	131559/63/1	Phiri
299	ester	Miti	f	38	141852/65/1	Phiri
300	Muley Joel	Sianiyinda	m	65	185460/73/1	Phiri
301	Steven	Yavwa	m	59	131939/63/1	Phiri

[Handwritten signature]

List of affected people - Musakashi						
Household number	NAME 1	NAME 2	Sex	Age	Phone No.	Zone
362	sini	kamwasha	f	53	117270/23/1	Sikanyika
455	Peter	Ndau	m	58	904403/67/1	Sikanyika
456	eness	malunga	f	60	107754/44/1	Sikanyika
457	Charles	chivinda	m	53	106766/22/1	Sikanyika
458	Angela	Nakanika	f	54	285193/66/1	Sikanyika
459	dyson	kafunda	m	56	179279/66/1	Sikanyika
460	hellen	mayumbelo	f	35	358487/67/1	Sikanyika
461	roger	samakal	m	42	142150/65/1	Sikanyika
464	jane	muzala	f	65	223971/67/1	Sikanyika
465	Elias	makaba	m	72		Sikanyika
466	oliver	kyapatwa	m	44	238006/66/1	Sikanyika
467	colinus	nachembe	f	51	194170/66/1	Sikanyika
468	Everlyn Matapo	chunga	f	64	110233/62/1	Sikanyika
469	tickness	mkandawire	f	57	285932/66/1	Sikanyika
470	magrate	sasa	f	50	125713/66/1	Sikanyika
471	grace	namwiinga	f	38	210717/65/1	Sikanyika
472	paul E	mulola	m	52	119082/66/1	Sikanyika
473	Felix	nkole	m	42		Sikanyika
	ZONE LEADER					
	PPSC CHAIR					
	SITE FACILITATOR					
	Joseph	mukuta	m	65	199967/67/1	Silungwe
	peter	Silungwe	m	66	147196/47/1	Silungwe
187	dina	chanzi	f	68	145603/51/1	Silungwe
216	joseph	ndumba	m	78	114770/67/1	Silungwe
217	frank	chinyama	m	42	349784/65/1	Silungwe
218	nasel	chimba	m	76		Silungwe
219	boston	chanzi	m	77	204776/51/1	Silungwe
220	James	Munyika	m	30	226079/42/1	Silungwe
221	Jesters	Musonda	m	72	154371/66/1	Silungwe
292	mbwambo	yava	f	40	163502/63/1	Silungwe
293	james	mulenga	m	60	204319/33/1	Silungwe
491	Jimson	siyanda	m	50		Silungwe
492	Maggie	niatya	f	48		Silungwe
493	cecilia bwalya	chungu	f	50		Silungwe
494	midah	Munyika	f	43		Silungwe
495	silive	sazeka	m	54		Silungwe
496	fidless	nampungwe	f	64		Silungwe
497	dinala	namwai	m	56		Silungwe
498	nyirenda	Golden	m	38	261560/51/1	Silungwe
499	kalaluka	Ireen	f	55	122621/24/1	Silungwe
500	Augustine	chimba	m	34		Silungwe
501	grace	naliwimba	f	43	127362/65/1	Silungwe
502	Eunice	Nakanyika	f	28	285222/66/1	Silungwe
	ZONE LEADER					
	PPSC CHAIR					
	SITE FACILITATOR					
503	Lydia	Hikeembe	F	37	0	Tubombeshe
280	Foster	Ndeke	M	42	0	Tubombeshe

Samia Simumba

Championer Sunford Nyandwa

List of affected people - Musakashi						
Household number	NAME1	NAME2	Sex	Age	Entered VRC	Zone
34	mary	mbewe	f	35	114068/55/1	Tubombeshe
62	annie	ngulibe	f	34	127415/55/1	Tubombeshe
63	makadani	nthani	m	38	120204/55/1	Tubombeshe
64	janet	nthani	f	40	421256/52/1	Tubombeshe
65	only	sinikende	m	27	288882/73/1	Tubombeshe
66	peter	hanzooama	m	38	110770/18/1	Tubombeshe
67	longwe	capion	m	92	121270/74/1	Tubombeshe
92	dorica	mwanza	f	43	224554/52/1	Tubombeshe
121	evans	musonda	m	40	235495/66/1	Tubombeshe
122	laile	musanje	f	64	120339/73/1	Tubombeshe
223	Charles	Mafusafwa	m	40		Tubombeshe
224	Thomas	Mukubwe	m	42	213641/16/1	Tubombeshe
415	Happy	Simukoko	m	43		Tubombeshe
416	Edward	Phiri	m	43		Tubombeshe
417	George	Yande	m	26		Tubombeshe
418	maxmillian	mayumbelo	m	62	119188/63/1	Tubombeshe
419	Ruth	Chiti	f	36		Tubombeshe
477						

ZONE LEADER
PPSC CHAIR
SITE FACILITATOR

Samford Nyandiga
Chumbe

List of affected people - Musakashi						
Sl. No.	Name	Gender	Age	Religion	Current IDSP	Location
123	mwakongo	ndofu	m	55	122782/65/1	Shangila
152	rabbeca	ndengi	f	55	143550/23/1	Shangila
153	mwanauta	venas	f	68	192824/65/1	Shangila
154	myuyutu	samuyombo	m	78	deceased?	Shangila
155	jonevera	mbuyi	f	59	122314/65/1	Shangila
156	Timothy	Musonda	m	62	205910/67/1	Shangila
157	saphiliya	kutemba	f	63	170354/66/1	Shangila
162	fred	mwila	m	47	145327/65/1	Shangila
182	joyce	mubanga	f	57	124565/41/1	Shangila
183	morgan	chisenga	m	56	137253/65/1	Shangila
185	harrison	chipwila	m	38	171089/22/1	Shangila
188	alfred	bwalya	m	60	126283/65/1	Shangila
189	nyangwa	mwabu	f	36	163503/63/1	Shangila
190	womba	sebente	f	53	150215/23/1	Shangila
191	francis	Sikanyika	m	39	232420/64/1	Shangila
194	sombo	kangombe	f	41	136379/63/1	Shangila
195	alfred	makanga	m	57	111515/62/1	Shangila
196	monica	cinjenge	f	47	203278/66/1	Shangila
197	mwansa	makungo	m	28	226971/62/1	Shangila
198	mwansa	macdonald	m	67	301735/11/1	Shangila
257	lambalinji	benjamin	m	44	139400/65/1	Shangila
258	mwerya	robinson	m	26	311519/64/1	Shangila
259	simukoko	john	m	67	109068/63/1	Shangila
260	chibwe	mathias	m	36	202270/32/1	Shangila
261	Evaristo	Bwalya	m	66	150641/66/1	Shangila
262	Costina	Namwayi	f	54	154371/47/1	Shangila
264	Olipa	Namfukwe	f	63	141132/47/1	Shangila
265	Pascal	Bwalya	m	54	182930/64/1	Shangila
266	Shadreck	Bendula	m	40	183811/65/1	Shangila
267	Lawrence	Lyanunga	m	49	242408/67/1	Shangila
268	Masansa	Grace	f	48	161479/41/1	Shangila
269	Namushi	Kakonga	m	56	149627/64/1	Shangila
270	Robert	Makayi	m	51	234713/67/1	Shangila
271	rosemary double w	Chilambwe	f	55	189637/66/1	Shangila
272	Hildah	Chilando	f	48	153932/43/1	Shangila
273	Misheco	Kaluba	m	31	202188/65/1	Shangila
277	john	simukoko	m	69	109068/63/1	shangila
278	chijenge	charles	m	52	131434/22/1	shangila
446	Prisca	Mumba	f	49		shangila
447	Pamela	nakamba	f	40		shangila
448	ernest	Chitende	m	52	177598/64/1	shangila
449	christine	chipanta	f	62		shangila
450	mwate humphery	Kabwe	m	51		shangila
451	grace	mansa	f	48		shangila
452	enock	masaka	m	67		shangila
453	LAWRENCE	Mwansa				Shangila
454	Precious	Rapali	f		171089/22/1	Shangila
	Noah	Sikanyika				Shangila
	Fredrick	Mumba			114161/65/1	Shangila

[Signature] Dania Simumba
Sofreco Site facilitator

List of affected people - Musakashi						
Musakashi number	NAME 1	NAME 2	Sex	Age	Full ID NO	Zone
15	Agness	Mumba	F			Kafue
32	Freda	Chileshe	F	54	126329/63/1	Kabanana
33	Elida	Miti	F			Nsofu
44	Ann	Onn	F			
49	Mwamba	Regina	F		179632/43/1	Nsofu
70	Cinjenge	Charles	m	47	131434/22/1	Shangila
84	Mweliwa	Emmelia	f	60	1219515/43/1	
85	Davies	Mundandwe	m	23	354488/65/1	
86	mundandwe	george	m	39	210727/65/1	
101	moses	chishimba	m	31	244589/33/1	
107	Jackson	kabulogo	m	68	112503/68/1	
139	mailes	namonje	f	63	270315/67/1	
255	kabulayi	chiwafwa	m	85	119306/24/1	
279	Enest	Chiteta	m	53	177589/64/1	
263	Alphonso	Dorothy	f	52	148153/23/1	Chimbamilonga
87	edwina	musonda	f	67	138342/61/1	Chimbamilonga
137	fredrick	kawanga	m	70	120294/66/1	Chimbamilonga
230	Tisiye	Hara	f	81	123133/67/1	Chimbamilonga
231	mwangala	timothy	m	71	107517/84/1	Chimbamilonga
232	bellita	musoni	f	53	196025/66/1	Chimbamilonga
246	simwanza	Sunday	m	60	113541/13/1	Chimbamilonga
306	Elison	Ngambi	m	65	103566/68/1	Chimbamilonga
307	English	Zuku	m	77	165347/52/1	Chimbamilonga
324	Mubuyaeta	Nalishabo	f	50	178800/83/1	Chimbamilonga
325	Chau	Chala	m	76	130030/63/1	Chimbamilonga
326	Kaona	Dorothy	f	55	158002/47/1	Chimbamilonga
327	Namuyemba	Agness	f	23	313589/66/1	Chimbamilonga
328	Sichula	joel	m	21	346084/65/1	Chimbamilonga
329	Kaloki	James	m	56	22025/67/1	Chimbamilonga
348	Luka	Musonda	m	80	147121/41/1	Chimbamilonga
349	Kachinka	Elizabeth	f	69	120777/17/1	Chimbamilonga
351	Mwesa	Constatine	m	63	105649/31/1	Chimbamilonga
352	Litesa	Idah	f	53	132194/63/1	Chimbamilonga
355	Mulenga	Inkson	m	70	146724/11/1	Chimbamilonga
356	Mwila	Elizabeth	f	49	383168/11/1	Chimbamilonga
420	Augustine	Kanchinka	m	22		Chimbamilonga
421	Kuyenda	John	m	68		Chimbamilonga
422	Peter	Mukuka	M	62	122427/42/1	Chimbamilonga
423	Benson	Botha	m	73	162169/68/1	Chimbamilonga
	James	Kanyambi	M		130854/66/1	Chimbamilonga
	Dohana	Sonika			148387/65/1	Chimbamilonga
	Beauty	Matipa			160959/62/1	Chimbamilonga
	MULENGA	Maloko			162708/65/1	Chimbamilonga
	Enock	Kamusaki			146380/22/1	Chimbamilonga
	Julien	MUSONDA			162728/44/1	Chimbamilonga
	Esriel	Chinkana			135651/61/1	Chimbamilonga
	Josephine	Ngonga			140891/21/1	Chimbamilonga
	Gilbert	Mbumba			123210/66/1	Chimbamilonga
	Grace	Kanyanga			283451/66/1	Chimbamilonga

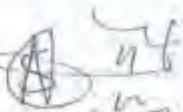

Chairperson - Simford Nyandwa
Sofreco Site Facilitator - Wanda

List of affected people - Musakashi						
Household number	NAME1	NAME2	Sex	Age	Entered YMC	Other
166	alick	mwale	M	61	169461/66/1	Kobvina
169	John	nkonde	m	52	185898/56/1	Kobvina
171	thomas	chisweka	m	53	139609/66/1	Kobvina
193	Moffat	sikambale	m	32		Kobvina
222	lewis	kayokolo	m	48	445337/11/1	Kobvina
225	muhanaga	benard	m	28		Kobvina
226	chanda	edward	m	76	129500/64/1	Kobvina
227	ngandu	isaac	m	17	285270/66/1	Kobvina
228	keleby	sikambale	m	72	145753/66/1	Kobvina
247	wellington	mwansa	m	62	119645/63/1	Kobvina
248	sharot	musole	f	58	130237/63/1	Kobvina
251	agatha	musonda	f	55	122829/65/1	Kobvina
281	Felix	Mwenya	m	56	204356/66/1	Kobvina
282	Alex	Mpotoyi	m	25	223322/65/1	Kobvina
283	Rodah	kayombo	f	63	114156/66/1	Kobvina
284	Justin	Mfula	m	50	208974/66/1	Kobvina
285	Yoram	Mulambia	m	56	126230/46/1	Kobvina
400	Edward	Chabasanga	m	58	119624/65/1	Kobvina
401	Fewdays	Chanka	m	61	136089/65/1	Kobvina
402	Lottie	Chinyanta	m	48	450630/11/1	Kobvina
403	Raphael	Muwowo	m	59	147835/47/1	Kobvina
404	Rose	Upite	f	46	140156/65/1	Kobvina
405	Charles	Mhanga	m	78	153212/66/1	Kobvina
406	Raphael	Ngandwe	m	67	151536/64/1	Kobvina
407	Lewis m	Kayokolo	m	48	445337/11/1	Kobvina
408	Stanley	Phiri	m	31		Kobvina
409	Betty	Swefa	f	38	137448/22/1	Kobvina
410	Cephas	Mukwatu	m	58	130559/23/1	Kobvina
411	Julius	Ngandu	m	64	160888/66/1	Kobvina
412	Jackson	Ngalamiya	m	70	132257/66/1	Kobvina
413	Kazanga	Chambasuku	m	50	139850/65/1	Kobvina
414	Alex	Pontoyi	m	19	223322/65/1	Kobvina
485	Mecia	Chitungiko	f	58	178985/22/1	Kobvina
486	Mary	ngandu	f	45	193623/66/1	Kobvina
487	Grace	Kakele	f	20	226736/66/1	Kobvina
488	Felix	Nakaundu	m	37	262059/82/1	Kobvina
489	Dalimo	Pontoyi	f	20	223320/65/1	Kobvina
490	Leny	chanda	m	51	118210/64/1	Kobvina
504	Racheal	nakamba	f	41	227907/47/1	Kobvina
505	dairman	chipango, see al	m	78		Kobvina
506	febby	Bwalya	f	39	285187/66/1	Kobvina
507	John	chavula	m	53	194059/66/1	Kobvina
508	Alass C	Kasanda	m	56	268361/33/1	Kobvina
509	James	bupe	m		135242/66/1	Kobvina
510	Christopher	kalumba	m	47	181170/33/1	Kobvina
	ZONE LEADER	GEORGE MUHANAGA	Male		151221/22/1	
	PPSC CHAIR					
	SITE FACILITATOR					
82	mumba	easter	f	44	148086/65/1	Luanshimba

George Muhanaga
Venerable Venerable Semumba

List of affected people - Musakashi						
Household number	NAME 1	NAME 2	Sex	Age	Current loc	Zone
149	fredrick	kapiya	m	47	144503/12/1	Kapolopolo
150	leonard tomson	mpanganani	m	67	138380/74/1	Kapolopolo
151	reuben	kajiko	m	67	119249/22/1	Kapolopolo
192	fred katongo	mutambo	m	47	179386/47/1	Kapolopolo
303	Langeni L	Misheck	m	63	124305/24/1	Kapolopolo
304	Kansenja Chalwe	Laban	m	64	149558/66/1	Kapolopolo
322	Elias Susan	Mwansa Mwape	m	60	109949/31/1	Kapolopolo
323	Mwansa	kunda	m	63	154830/66/1	Kapolopolo
334	John	Simukoko	m	43	230115/66/1	Kapolopolo
347	Chipipa L	Ngombi	m	56	123022/22/1	Kapolopolo
353	welcome	Simukoko	m	61	177563/66/1	Kapolopolo
354	Kabaso	tandeo	m	69	155217/66/1	Kapolopolo
357	kanjengo m	Dickson	m	62	120180/22/1	Kapolopolo
475	Sunford	Nyendwa	m	43	108232/18/1	Kapolopolo
476	gideon	mwansa	m	44	465453/11/1	Kapolopolo
478	shurbet		m	43		Kapolopolo
479	thom	chakama	m	76		Kapolopolo
480	daniel	mwale	m	52		Kapolopolo
481	Justine	sichima	m	41		Kapolopolo
482	ignatius	luchembe	m	56	125118/63/1	Kapolopolo
483	biswell justin	Banda	m	50		Kapolopolo
484	nelson	Phiri	m	30		Kapolopolo
	Morgan	Kaunda				Kapolopolo
	Catherine	KAUNDA				Kapolopolo
	Masos	Ngombi	m	66	177845/84/1	Kapolopolo
	Mary	Kanase	f			Kapolopolo
	Joseph	Mwansa	m			Kapolopolo
	ZONE LEADER	M. Kunda				
	PPSC CHAIR					
	SITE FACILITATOR					
3	Stanley	Phiri	M	31	0	Kobvina
4	Samnana	L Womba	F	60	109861/22/1	Kobvina
5	Charles	Mwansa	M	31	296815/66/1	Kobvina
6	Isaac	Ngandu	M	29	285270/66/1	Kobvina
8	Raphael	Muwowo	M	59	147835/47/1	Kobvina
9	Shadreck	Mutoya	M	29	285115/66/1	Kobvina
10	George	Muhanga	M	45	131221/22/1	Kobvina
11	Cephas	Mukwatu	M	58	130559/23/1	Kobvina
19	Luka	Musole	M	68	130490/65/1	Kobvina
42	Stanious	Mushika	M	30	248779/32/1	Kobvina
43	raphael	ngandwe	m	66	151536/64/1	Kobvina
93	chambasuku	kazanga	m	50	139850/65/1	Kobvina
95	ngandu	julias	m	53	600888/66/1	Kobvina
110	majorj	chipanga	f	31	277434/66/1	Kobvina
125	Eddy	kakele	m	20	178985/66/1	Kobvina
126	Jackson	ngalamya	m	70	132257/66/1	Kobvina
160	febby	ngandu	f	40	285187/66/1	Kobvina
161	Russan	kakele	m	25	333098/66/1	Kobvina
164	david	nkandu	m	37	261534/66/1	Kobvina

MWANS KAUNDA

Chair person - Sunford Nyandwa - 
 Sonia Simumba - 
 Sofreco site facilitator

List of affected people - Musakashi						
Ward/IDSP Number	NAME1	NAME2	Sex	Age	External Ref.	Comm
83	Samson	banda	m	50	168377/41/1	Luanshimba
96	p shimshi	robert	m		107269/21/1	Luanshimba
97	musanda	glady's	f	31	202790/65/1	Luanshimba
98	susiku	mundandwe	m	69	138852/66/1	Luanshimba
100	treford	chibwe	m	43	759162/33/1	Luanshimba
102	tetus	mwape	m	60	203985/33/1	Luanshimba
103	moses	mupaka	m	36	243350/64/1	Luanshimba
113	sustone	sichone	m	77	128572/27/1	Luanshimba
114	victoria	katanjiko	f	64	152679/64/1	Luanshimba
115	mubanga	evaness	f	54	182710/66/1	Luanshimba
116	chibuye	cathrine	f	55	216693/67/1	Luanshimba
117	beatrice	banda	f	51	250498/67/1	Luanshimba
118	jinana	mulambu	m	49	134630/25/1	Luanshimba
119	davis	kahilu	m	43	234773/67/1	Luanshimba
120	peter	riguluba	m	65	305086/11/1	Luanshimba
127	jennifer	mwelwa	f	42	181584/31/1	Luanshimba
128	cosmas	chisanga	m	83	109870/43/1	Luanshimba
129	joseph	kamiji	m	66	182069/66/1	Luanshimba
130	sebastian	mutale	m	69	173979/61/1	Luanshimba
131	christine	kalelesl	f	40	148514/66/1	Luanshimba
138	saston	sichone	m	78	125427/47/1	Luanshimba
140	funwell	kusaloka	m	57	139219/23/1	Luanshimba
141	cathrine	musonda	f	53	188829/66/1	Luanshimba
174	benson	kabwe	m	57	168961/64/1	Luanshimba
175	florence	mwani	f	50	163932/32/1	Luanshimba
179	anna	kaminyau	f	57	166631/64/1	Luanshimba
180	chipulo	alubina	f	49	147118/31/1	Luanshimba
181	justina	bwalya	f	42	237836/66/1	Luanshimba
201	aaron	kamboyi	m	71	115731/23/1	Luanshimba
202	james	riseba	m	60	160723/66/1	Luanshimba
203	john	chikonde	m	82	169737/61/1	Luanshimba
204	henry	kamanga	m	68	119369/17/1	Luanshimba
205	wilson	tandiloko	m	60	113656/13/1	Luanshimba
206	chunga	mwansa	m	69		Luanshimba
207	costa	sinunu	m	49	138907/65/1	Luanshimba
208	malembo	simulilo	m	57	125277/85/1	Luanshimba
209	william	chenga	m	46	198926/43/1	Luanshimba
210	edward	makalu	m	75	134881/22/1	Luanshimba
211	alex hildah	kapinga kaumba	m	56	132906/23/1	Luanshimba
212	stephen	chama	m	74	125886/71/1	Luanshimba
213	kachepa	nancy	f	72	119267/65/1	Luanshimba
214	syvester	mulumbwa	m	66	165596/66/1	Luanshimba
215	weddington	nikosi	m	71	164359/43/1	Luanshimba
253	nkole	felix	m	43	221989/66/1	Luanshimba
359	Moses	Lumayi	m	37	156768/63/1	Luanshimba
368	John	Chiluba	m	60		Luanshimba
22	Muridandule	Golden	M	38	211840/62/1	Luanshimba
23	Muyembe	Fordson	M	66	125132/23/1	Luanshimba
24	Chanda	Simon	M	32	203706/44/1	Luanshimba

Chairperson - Simford Ngandiro
Soyreco Site Facilitator - Chumba

List of affected people - Musakashi						
Household number	NAME	NAME	Sex	Age	Current HHC	Zone
360	Mathew	Mulenga	m	66	210806/67/1	Phiri
361	Justine	Kabwe	m	54	215507/33/1	Phiri
511	mario	antonio	f	72	158063/23/1	Phiri
512	thresa	mwewe	f	62	107204/64/1	Phiri
513	laston	chipulo	m	59	162317/64/1	Phiri
514	ruth	yavwa	f	37	210706/63/1	Phiri
515	Martha	kuteliwa	f	55	167887/32/1	Phiri
516	victor	chaliwe	m	41	238056/32/1	Phiri
517	molton	Muwowo	m	56	166819/16/1	Phiri
518	Getrude Dinah	nyangu	f	49	271086/11/1	Phiri
519	Jester	N musonda	f	30	154371/66/1	Phiri
	Thresa	Mwewa	f	47	107204/64/1	Phiri
	Patrick	Simwanza	m	72	142639/47/1	Phiri
	Charles	MAMBWE	m	48	192746/66/1	Phiri
	Chabu	Jackline	f	45	156575/65/1	Phiri
	Musonda	Jesters	m	73	154371/66/1	Phiri
	Chibuye	Sunday	m	38	180792/65/1	Phiri
	Martha	Kulela	f	55	167887/32/1	Phiri
	Mary	Muwowo	f	68	166819/16/1	Phiri
	christina	petrol	f	40	188921/64/1	Phiri
	George	sekwiwa	m	32	279307/66/1	Phiri
	mika	lufuka	f	48	124720/68/1	Phiri
	oscar	ngandwe	m	26	292918/64/1	Phiri
	Regina	mwamba	f	52	179632/43/1	Phiri
	sancious	changwe	m	30	234862/67/1	Phiri
	Francis	chama	m	71	229213/67/1	Phiri
	Mathews	mulenga	m	66	210806/61/1	Phiri
	musa	nyirenda	m	51	167898/66/1	Phiri
	Dainess	mwila	f	40	154275/65/1	Phiri
	Jonas	mubanga	m	52	148762/32/1	Phiri
	Roy	goddard	m	33	218836/42/1	Phiri
	Dorince	Munzenzi	f	49	147426/21/1	Phiri
	ZONE LEADER	Phiri Zone				
	PPSC CHAIR					
	SITE FACILITATOR					
	mary	Musonda	f	59	227123/67/1	Shangila
	dason	siamu	m	65	137588/47/1	Shangila
165	osward	komani	m	50	178705/32/1	Shangila
169	hilda	nakamba	f	56	131986/66/1	Shangila
170	Musala	K	M	90	159247/67/1	Shangila
172	Christopher	Musole	M	43	153598/65/1	Shangila
18	emmy	naliwamba	f	60	144439/47/1	Shangila
20	victor	chama	m	41	139622/44/1	Shangila
69	katongo	john	m	70	159493/66/1	Shangila
71	prisca	venase	f	36	400960/67/1	Shangila
72	chisambaula	morris	m	67	115357/23/1	Shangila
99	dinaless	namukonda	f	58	142042/47/1	Shangila
111	noah	Sikanyika	m	70	104387/47/1	Shangila
112	george	muhunga	m	80		Shangila

KABWE

JUSTIN KABWE

Sofreco Site facilitator - Phiri

List of affected people - Musakashi						
HOUSEHOLD NUMBER	NAME 1	NAME 2	Sex	Age	Explot No	Zone
	Francis	Musonda			144754/43/1	Chimbamilonga
	Mashikini	Elias			150320/23/1	Chimbamilonga
	Mulenga	Zulu			137959/65/1	Chimbamilonga
	Bupe	Kambobe			279115/61/1	Chimbamilonga
	ZONE LEADER					
	PPSC CHAIR					
	FACILITATOR					
	Katuka	Mwanza			140194/23/1	Chimbamilonga
399	Musole	Sharot	f	58		k
35	Francis	Sikanyika	M	43	0	Kabanana
36	Vera	Namukonda	F	60	169212/66/1	Kabanana
57	Khabango	Nthani	M	38	2876471/52/1	Kabanana
163	Justine	kunda	m	38	183859/65/1	Kabanana
184	lister	simukanga	f	69	119227/64/1	Kabanana
241	mubanga	andrew	m	49	140104/65/1	Kabanana
242	banda	raphael	m	51	369772/11/1	Kabanana
243	nanyirongo	olita	f	54	162201/64/1	Kabanana
244	phiri	florence	f	54	140355/12/1	Kabanana
245	nambaya	loveness	f	60	131773/47/1	Kabanana
249	estone	simbeye	m	74	138927/47/1	Kabanana
250	namukwasa	violet	f	60	126812/47/1	Kabanana
305	Chongo	job	m	65	173603/33/1	Kabanana
309	febby	Namubizze	f	68	124184/68/1	Kabanana
312	sandoki	Munyenyemba	m	35	2117101/62/1	Kabanana
317	Bornifance	Kasesa	m	51	160018/62/1	Kabanana
335	David	Mwansa	m	49	288230/66/1	Kabanana
338	mukulata	Teresa M	f	64	106724/63/1	Kabanana
339	Seliva	Simuwelu	f	55	126028/47/1	Kabanana
340	Chinombwe	Eunice	f	35	135362/33/1	Kabanana
344	Veronica	Belyani	f	67	100325/66/1	Kabanana
358	Mwape	Pande E	f	60	158485/64/1	Kabanana
424	Judith	Nambaya	f			Kabanana
425	Francis	Muteba	m		189766/61/1	Kabanana
426	Mwamba	florence	f	26	346143/65/1	Kabanana
427	Kenny	Simuwelu	m	51	138657/65/1	Kabanana
428	Besa	Mwila	m	41	156238/63/1	Kabanana
429	finess	Nakabela	f	57	141961/47/1	Kabanana
430	Sunday	Kanyika	m	28	285314/66/1	Kabanana
431	khabago	nthani	m			Kabanana
432	Susan	khondowe	f	41	638913/11/1	Kabanana
433	Siwale	Mudyani	m	47	213154/16/1	Kabanana
434	fanwell	sichilima	m	81	120749/42/1	Kabanana
436	mathias	Phiri	m			Kabanana
437	vincent	mubanga	m	40		Kabanana
438	Jane	Chintu	f	45		Kabanana
	Nambaya	Christine	f		132428/47/1	Kabanana
	Simukanga	Davies	M		163983/65/1	Kabanana
	Chanda	Webby	m		180479/17/1	Kabanana
	Ester	Namukwasa	f		288230/66/1	Kabanana

Chairperson - Sunford Nyandwe
 ZONE LEADER - Besa Mwila - Besa
 Sapreco Site Facilitator - Othman

List of affected people - Musakashi						
Household number	NAME1	NAME2	Sex	Age	Linked ID#	Zone
40	Royd	Tembo	M	55	133053/65/1	Luanshimba
41	Chinyama	Kambulo	M	37	0	Luanshimba
45	Choia	Chishimba	F	20	340000/66/1	Luanshimba
46	Mfula	Magret	F	70	179292/66/1	Luanshimba
50	Nelson Elvis	Mwansa	M	75	110854/64/1	Luanshimba
51	Banda	Matta	M	62	263572/52/1	Luanshimba
52	Oscar	Ngandwe	M	25	292918/64/1	Luanshimba
53	Mbulo	Davis	M	62	143600/66/1	Luanshimba
54	Benard	Kasonso	M	48	188644/62/1	Luanshimba
55	Eness	Chinama	F	58	180903/66/1	Luanshimba
56	Benard	Musole	M	61	126574/65/1	Luanshimba
274	doreen	munsanda	f	65	139606/23/11	Luanshimba
275	Mumba	Vestona	m	71	1246170/51/1	Luanshimba
276	Muzinga	Bernadette	f	80	140487/99/1	Luanshimba
302	David	Mwiniunga	m	56	228650/67/1	Luanshimba
308	nseba	Kabaso	f	61	201589/33/1	Luanshimba
313	Golden	Kahudi	m	67	108422/24/1	Luanshimba
314	Mary	Namfukwe	f	50	2111471/66/1	Luanshimba
315	Chinyama	Ungeni	m	57	221352/67/1	Luanshimba
316	Ndola	Muyanabo	f	50	143189/85/1	Luanshimba
331	Makai	Jackson	m	64	111137/23/1	Luanshimba
341	Shakilina	Mupinga	f	54	142326/62/1	Luanshimba
363	Hildah	Kaumba	f	42		Luanshimba
364	Sunday	Ndau	m	28		Luanshimba
365	Emelia	Mwehwa	f	59		Luanshimba
366	Chanda loveness	mwansa	f	60		Luanshimba
367	Belia	Mulundu	f	56		Luanshimba
369	Bolas	simukonda	m	38		Luanshimba
370	Bwale	Grace	f	60		Luanshimba
371	Kaoma Enock	Musonda	m	62		Luanshimba
372	Clement	Musonda	m	47		Luanshimba
373	Shamputa	Joyce	f	55		Luanshimba
374	Chinyama	Dickson	m	57	247651/67/1	Luanshimba
375	Manex	Kashimba	m	29		Luanshimba
376	Jane	muzenga	f	46	188644/62/1	Luanshimba
377	Challusa	Edson	m	24		Luanshimba
378	Kaoma	Saiwelo	m	63		Luanshimba
379	Rosemary double w	Chilambwe	f	53		Luanshimba
380	Ezekiel	Banda	m	56		Luanshimba
381	Ndabika	Lukanga	m	62		Luanshimba
382	riness	Samukasa	f	51	158699/23/1	Luanshimba
383	Dorothy	Aliponso	f	53	148153/23/1	Luanshimba
384	Billingsley	Siyangwe	m	62		Luanshimba
385	Mulenga	Mary	f	65		Luanshimba
386	Malan	Kashimbi	m	50		Luanshimba
387	Kambeu	Silvia	f	22	354454/65/1	Luanshimba
388	Davies	Chiyengi	m	64	191354/67/1	Luanshimba
389	Molisa	Mugepuka	f	70		Luanshimba
390	Bwalya	Mary	f	34	210718/65/1	Luanshimba

Sofreco Site Facilitator - *[Signature]*
Chairperson - Sunford Nyendwe *[Signature]*

List of affected people - Musakashi						
Household number	NAME	NAME	Sex	Age	Contract ref	Zone
443	Agness	Mumba	f	32	210704/65/1	Kafue
444	Godfrey	shilombe	m	51	193870/66/1	Kafue
445	anna	chiteta	f	38	283380/66/1	Kafue
462	Ivor	chafansi	m	33	670093/11/1	Kafue
463	Bornface	Kabwe	m			Kafue
474	Jennipher	kumuchele	f	52	167402/66/1	Kafue
	Kashoto	Mpundu				Kafue
	Mwansa	Musonda				Kafue
	Eris	Mbambala				Kafue
	Vincent	Kalumba				Kafue
	Dickson	Wamukwamba	M		308396/66/1	Kafue
	Royda	Musonda	F		181580/66/1	Kafue
	Georgina	Mkandawire	F		182058/66/1	Kafue
	Collins	Shilombe	M		281649/66/1	Kafue
	Stanislaus	Kaoma	M		101004/44/1	Kafue
	James	Chola	M		220135/66/1	Kafue
	Jonny	Bweupe	M		246675/66/1	Kafue
	Chrispin	Simpamba	M		183739/65/1	Kafue
	Beauty	Mumba	F		258877/33/1	Kafue
	Magaret	Nakombe	F		197204/66/1	Kafue
	Derrick	Mwansa	M		287252/66/1	Kafue
	Benjamin	Chipwila	M		129804/65/1	Kafue
	Broker	Mulenga	M		288529/65/1	Kafue
	Matilda	Mwila	F		109939/66/1	Kafue
	ROSEMARY	Bwalya	F		108750/63/1	Kafue
	Albetina	Chola	F		123979/66/1	Kafue
	ZONE LEADER	G. Chingizwe				
	PPSC CHAIR					
	SITE FACILITATOR					
73	paul	kaunda	m	61	123783/66/1	Kapolopolo
74	andrew	mumba	m	67	119731/66/1	Kapolopolo
88	innocent	Mutale	m	31	205869/65/1	Kapolopolo
89	mulenga	mwitaba	m	50	18060/66/1	Kapolopolo
90	luka	simfukwe	m	50	197775/66/1	Kapolopolo
91	angulina	mkandawire	f	66	115706/43/1	Kapolopolo
104	rika	chileshe	f	70	203124/66/1	Kapolopolo
105	Nsofu	grace	f	37	266531/66/1	Kapolopolo
106	ngome	moses	m	65	177852/66/1	Kapolopolo
108	leonard stephen	munkondya sikai	m	45	282722/67/1	Kapolopolo
132	patrick	kayiko	m	45	224683/66/1	Kapolopolo
133	samuel	Manchishi	m	33	102110/19/1	Kapolopolo
134	peter	kanungulu	m	69	152935/66/1	Kapolopolo
135	paul	kaunda	m	61	223045/65/1	Kapolopolo
136	cosmus	mayonde	m	63	153394/66/1	Kapolopolo
142	james	simukonda	m	27	249042/47/1	Kapolopolo
143	laston	singogo	m	26		Kapolopolo
144	john	kaoma	m	31	234285/47/1	Kapolopolo
145	estelle	gibson	f	63	112760/66/1	Kapolopolo
148	thomson	mpanganf	m	29	283857/66/1	Kapolopolo

Chairperson - Simford Nyandwa
Vice Chairperson -
Chingizwe

16.8 APPENDIX H: Letter of clearance from ZEMA

	ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY
Head Office Corner of Church & Suite Roads P.O. Box 35131 Lusaka, Zambia Tel: +260-211-254130/254023/254058 Fax: +260-211-254164/256656	Northern Regional Office Jacaranda Road P.O. Box 71302 Mokola, Zambia Tel: +260-212-821048/610407 Fax: +260-212-610248
Livingstone Office Plot No. 550 Junction Chetani / Hero Roads Livingstone, Zambia Tel / Fax: +260-213-321297	Chirundu Border Office Lusaka Road P.O. Box CRU31 Chirundu, Zambia Tel/Fax: +260-211-215281

In reply please quote

ZEMA/FAC/102/12/9/M/53^{Nar}

August 20, 2015

The National Project Coordinator
Ministry of Agriculture and Livestock
Irrigation Development Support Project
P.O. Box 50291
LUSAKA

Dear Sir,

Re: Environmental Impact Statement (EIS) and Resettlement Action Plan (RAP) for the Proposed Musakashi Irrigation Scheme in Mufulira

The above matter refers.

The Zambia Environmental Management Agency (ZEMA) has reviewed the said EIS and RAP and would now like to inform The Ministry of Agriculture to pay for the documents and submit twelve final hard copies of the EIS, twelve final hard copies of the RAP and soft copies of both documents.

The Agency would like to request The Ministry of Agriculture to delete the word "draft" from the title of the documents to be submitted.

Find attached an invoice for the EIS and RAP review fee amounting to Kwacha Six Forty Nine Thousand Nine Hundred Ninety Five (**K649, 995.00**) only.

Yours faithfully,


Webby Simwayi
A/Manager-Northern Region
For: Director General
ZAMBIA ENVIRONMENTAL MANAGEMENT AGENCY

All correspondence to be addressed to the Director General - Head Office
Email: info@zema.org.zm, Website: www.zema.org.zm
Emergency Toll Free No. on Zamtel Lines: 953

17 MAPS

17.1 INTRODUCTION

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

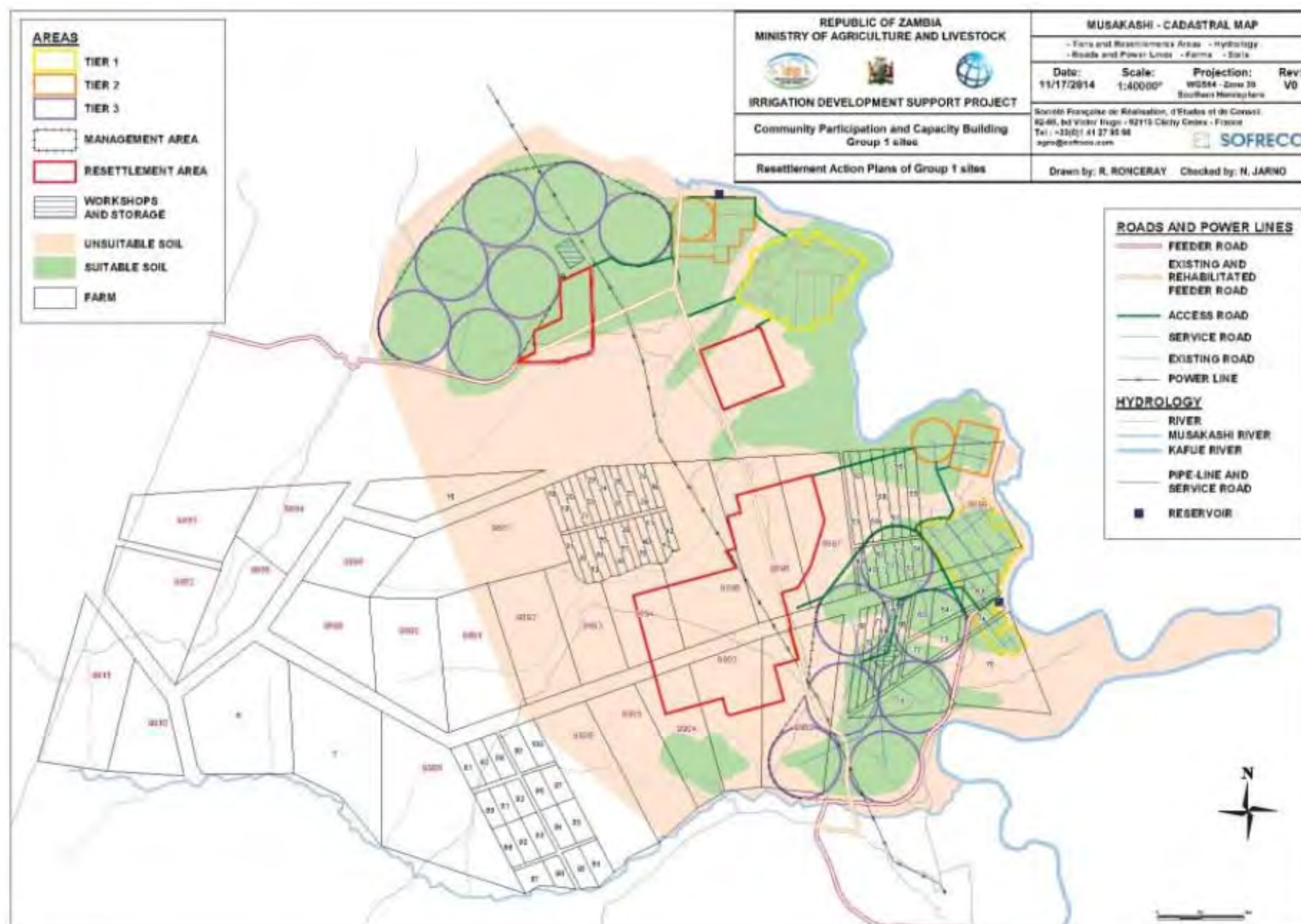
- Soils: Soil Survey of the Proposed Musakashi Site, IDSP, Hungwe 2012;
- Engineering and design: Detailed Design of Group 1 Sites: Draft Detailed Study of the Musakashi Sites Z&A P. Antonaropoulos & Associates;
- Cadastral Data: MAL Land Husbandry field surveys August-September 2013;
- Socio-economic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

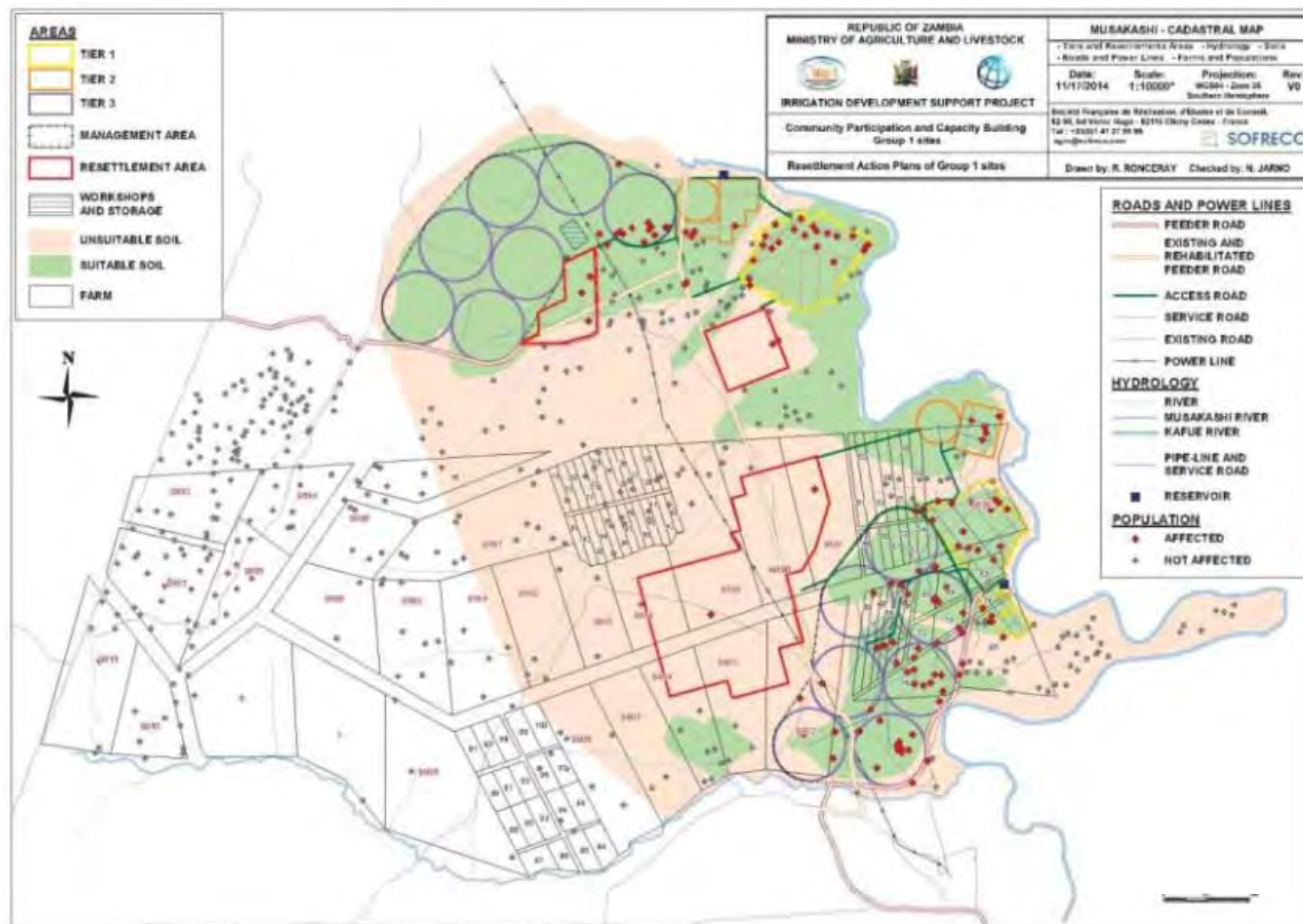
The maps were prepared by the Sofreco GIS Specialist on the basis of maps and measurements carried out by MAL Land Husbandry.

17.2 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.

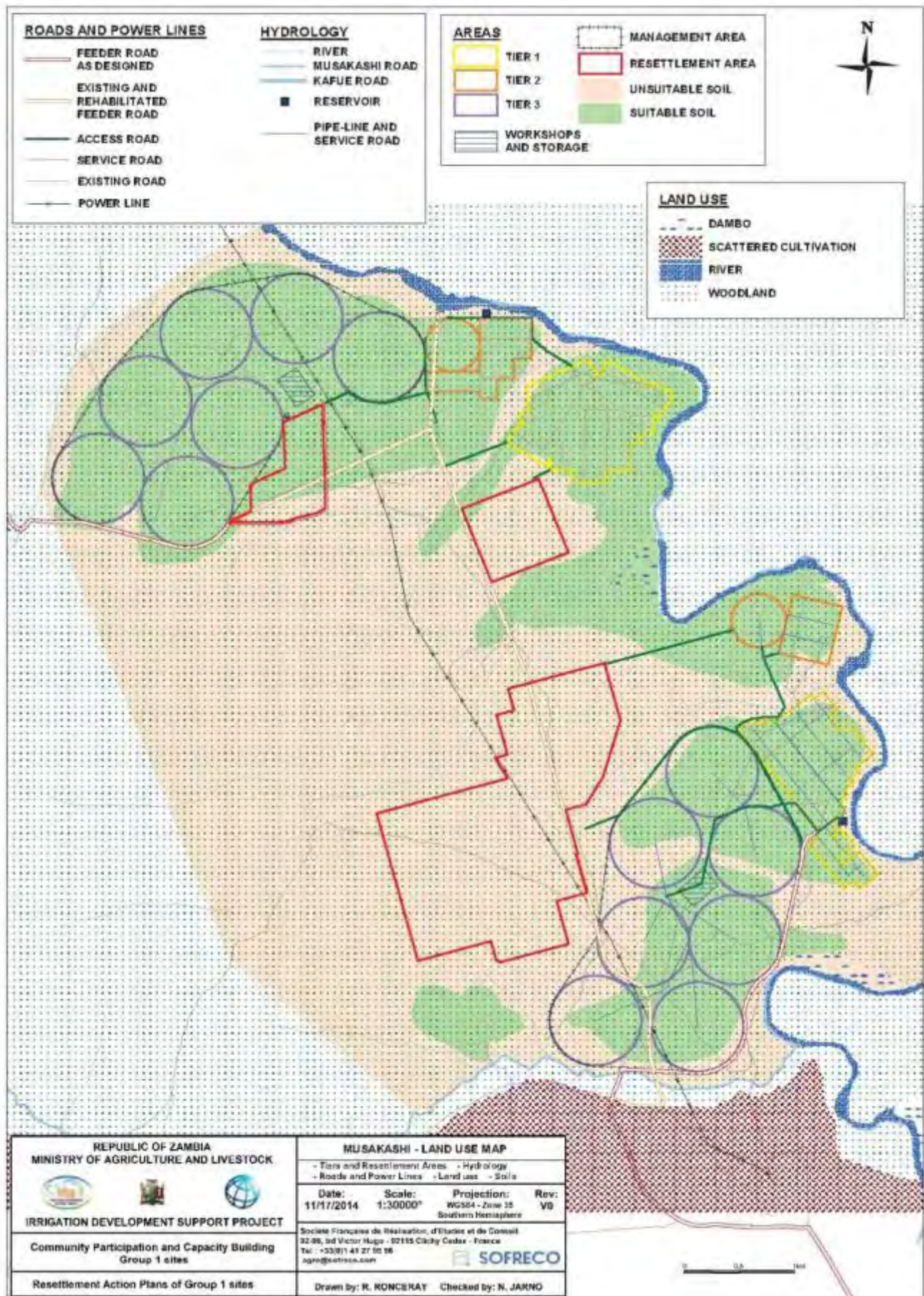
The cadastral maps also show the soil suitability for irrigation: unsuitable soil is shown in pink and suitable soil is shown in green.





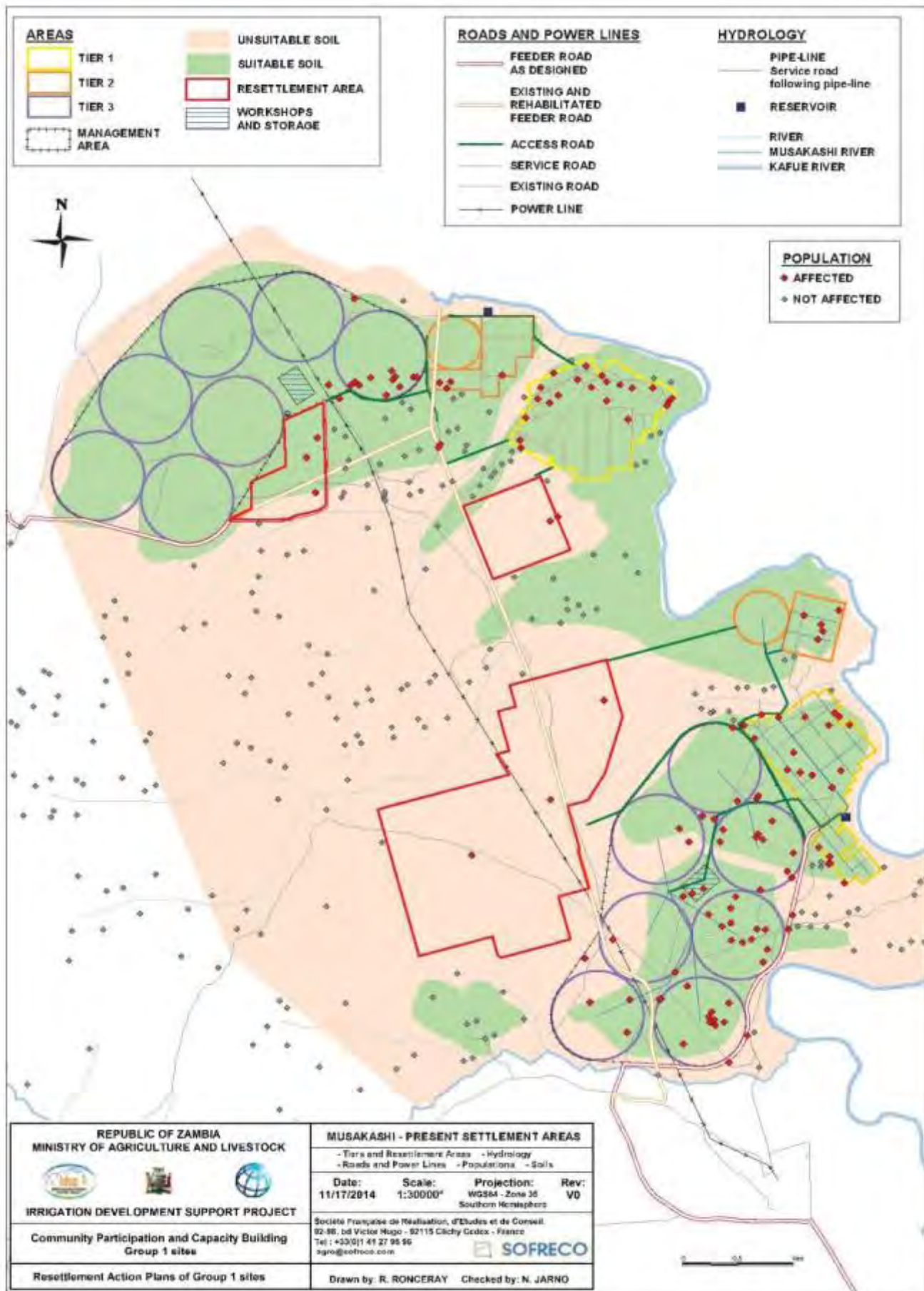
17.3 MAPS 2: LAND USE MAP

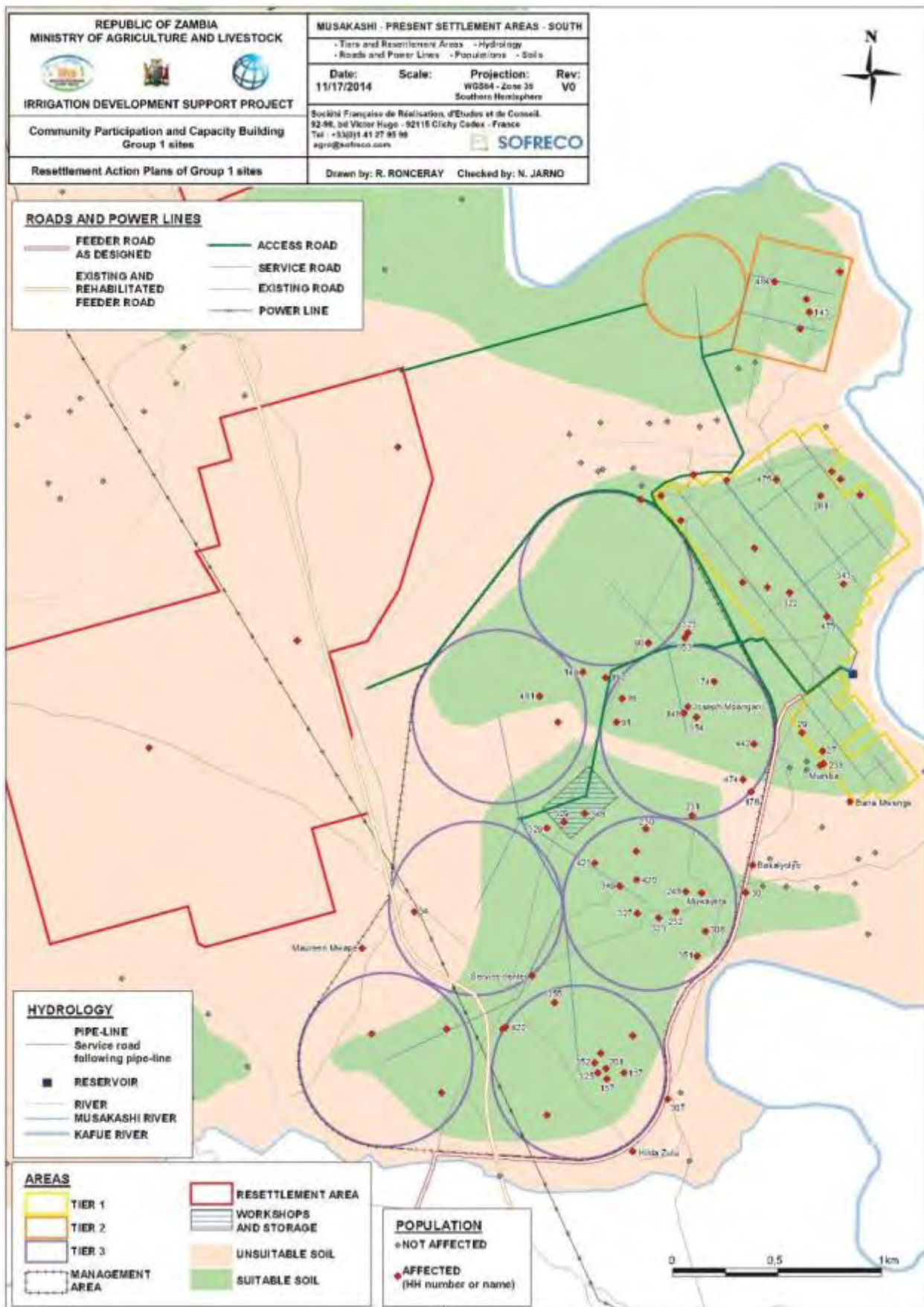
The purpose of the Land Use map is to describe the current land use in order to anticipate the changes due to the project implementation. The project will not affect substantially the land use in the Musakashi area. Outside the areas proposed for project development areas the map shows extensive woodland,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



17.4 MAPS 3: PRESENT SETTLEMENT AREA

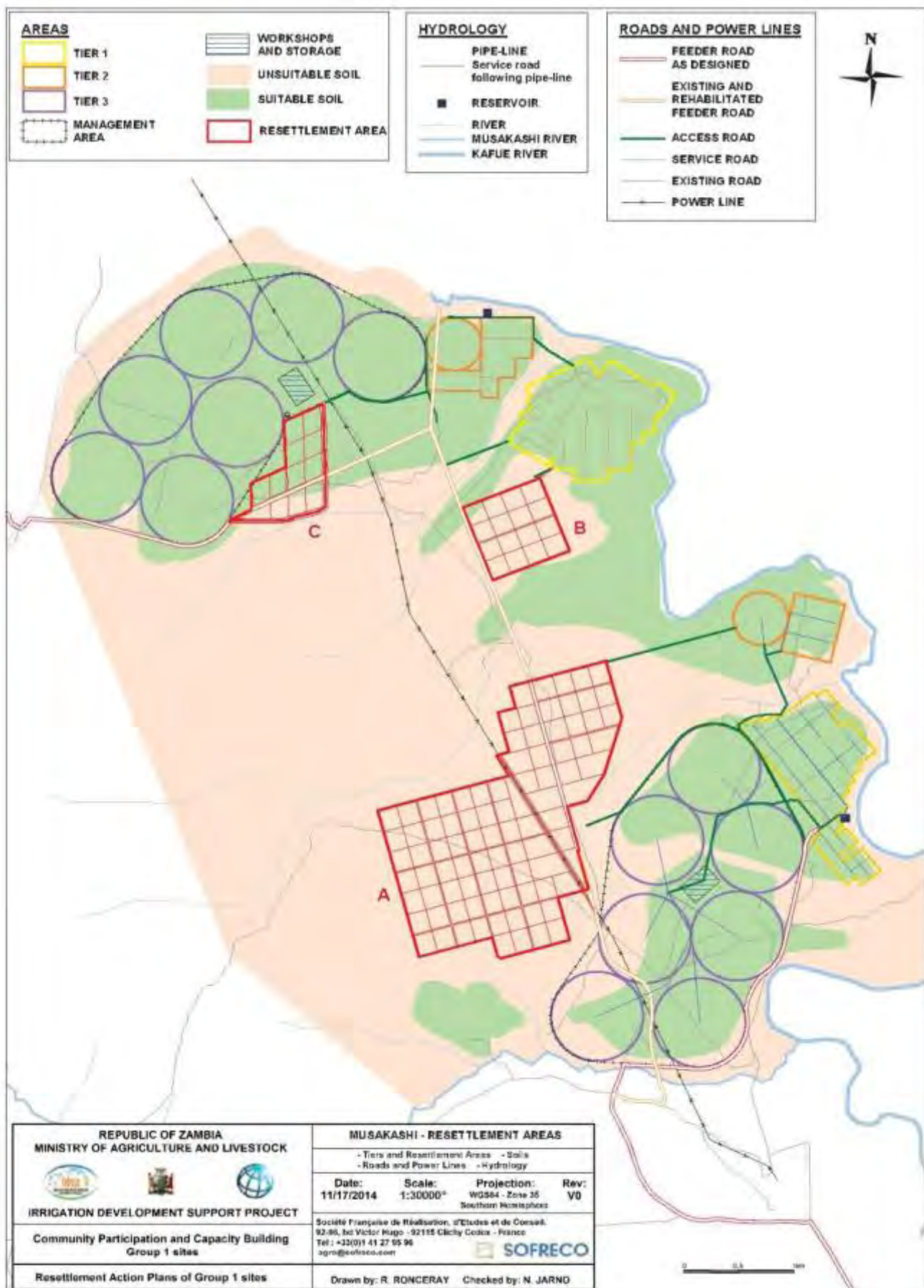
The Present Settlement Area map presents the actual location of the Musakashi households: in grey, not affected by the scheme or the resettlement areas; in red, affected by the scheme or the resettlement areas. The present settlement map was used to identify affected households and define the number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





17.5 MAPS 4: RESETTLEMENT AREA

The resettlement area map shows the three resettlement areas identified in Musakashi, their linkage with the road network and their proposed internal layout. The average housing plot is closed to 3.9 ha as agreed with the Community.



18 MEETING PURPOSE AND INTRODUCTION

The main purpose of the meeting was to discuss some issues on Resettlement Sites that needed clarification. The main headings are clearly stipulated in the IFC handbook for preparing a RAP and ZEMA guidelines. The visit will take two days and this will involve having a round table meeting to discuss some issues on 21st October and on the following day 22nd have a site visit in order to verify some details such as;

- Confirming resettlement sites;
- Check on the road network;
- Assessment of resettlement sites in terms of availability;
- Plot sizes and their determination.

18.1 Proceedings

The meeting was opened with a prayer, followed by opening remarks.

Mr. Maimbolwa opened the meeting by highlighting what SOFRECO has done so far. He further explained the mission of the visit which was to discuss on resettlement sites and look at things such as:

- Location for the resettlement sites;
- Criteria of choosing this area and the disadvantages and disadvantages;

It was further explained that resettlement sites was not adequately covered and some issues are being worked on currently such as:

- Institutional arrangements;
- Implementation schedule;
- Grievance redress mechanism;
- How the project will be managed.

It was also shared by the PPSC chairman, Mr. Nyendwa that the community desired to be resettled on the rain fed portion than settle in a compound

arrangement, he went on and explained that the plots that were identified for resettlement sites in the northern and southern parts.

He further explained that people in the community were consulted, as consultation meetings were organised, the Household plans were done by the Ministry of Agriculture and presented to the community. The plot sizes were proposed by the community and the 3 hectares was the ideal size for the plots.

The map was then clearly labelled and discussed with guidance and clarification from Mr. Chirwa who later on verified if the plotted points are areas idea for resettlement and he then confirmed the map was fine with the marked places.

Mr. Maimbolwa also said that apart from the existing roads, the feeder roads also need to be confirmed as well.

Land to land resettlement was also discussed and debated upon and agreed that equivalent land is given to them.

A list of questions was then looked at, with Mr. Nyendwa taking the lead in reading the questions and participants put in comments and suggestions accordingly and the following were the topics discussed according to the guidelines shared on the mission of the visit, the questions are shared as an appendix.

- On the location for resettlement sites it was agreed that compound settlement is not ideal but rather resettling on the rain fed portion as that would lessen the having to move to tier one and also to rain fed portion;
- The current proposed site conforms to Musakashi community proposed sites;
- The form of land tenure at Musakashi site is state land on 99year lease;
- It was confirmed that 114 houses are the correct number of houses for those to be resettled as that's the correct number of people currently living in the areas marked out to be tiers;
- In terms of compensation, it was observed that they are people who have more assets such as boreholes and bigger houses but seems that the project will make them worse off than better off. Consideration of how much investment has been put in ones farm plot was not looked into;
- In terms of housing designs, there was little consultation and there is need to enquire more on the tendering process, thereby community members were not consulted;
- The area has good soils and the suggested 3 hectares is ideal for house site and rain fed portion;
- The site picked out to resettle people was then looked at in detail, with advantages and disadvantages listed out in a table.



SITE A		SITE B		SITE C & D	
Advantages	Disadvantages	Advantages	Disadvantages	Advantages	Disadvantages
<ul style="list-style-type: none"> - Near Power Line - Suitable for housing - Access to feeder roads - Near to existing residence - Near tier 1 & 2 - No people currently on site A 	<ul style="list-style-type: none"> - Very far from Clinic - Very far from Schools - No treated water 	<ul style="list-style-type: none"> - Near tier 1 & 2 - Near to road - Good arable land 	<ul style="list-style-type: none"> - Very far from power line - Far from domestic water - Far from clinic and school 	<ul style="list-style-type: none"> - Near tier 1 & 2 - Near to roads - Good arable land - Near to stream 	<ul style="list-style-type: none"> - Far from domestic water - Far from clinic - Far from schools

Criteria for choosing 3 hectares resettlement plot was:

- What the farmers are currently farming;
- The Soil type and cattle carrying capacity;
- Out of the 3 ha, definitely 1 ha will be arable land.
 - The question on water reticulation was discussed and suggestion was the local authority should provide these services,
 - The service centre was discussed and it was agreed that a centre is located in the central part of closer to people,
 - The form of land tenure at Musakashi site is straight forward as the process should involve and obtain 99 year lease,
 - In terms of land capability some measures will have to be taken in order to improve the soils in the resettlement sites as the soils are not as good as the ones marked out for the tiers. Mr. Maimbolwa suggested that it is possible that we find land for grazing too,

- For modalities of allocating plots there was a suggestion of conducting a raffle,
- As for the compensation that is there now its only targeting people who are in tiers and its not targeting those who will lose land due to resettlement, road construction and ZESCO works.

18.2 Way forward and closing remarks

It was emphasised that it will be important to have monitoring done and also very important that some lots are reserved for future use. The roadmap is supposed to be open to everybody and information flow has been very bad and there in need to improve for future arrangements.

On planning Mr. Maimbolwa reminded the members that we should plan well and leave gaps so that we avoid squatters getting in. The land should be set aside and also include the council to get the reservations and also numbering.

A vote of thanks was shared to all attendants of the meeting and the meeting was then closed with a prayer.

19 DAY 2: SITE VISIT

The mission of the site visit included details such as:

- Confirming resettlement sites;
- Check on the road network;
- Assessment of resettlement sites in terms of availability;
- Plot sizes and their determination;
- The site visit was successfully done and worthwhile. The sites were found to be available with enough land to work with.

There will be need to ensure and verify and know the individual farmers who will be putting land together for future compensation purposes, but this is something that can be followed up with Ministry of Agriculture. A team of 10 people participated in the site visit that began in the northern part and finished off the visit in the southern part before having a round chair discussion at ZARI to close off the site visit.



19.1 MAIN TOPICS DISCUSSED

Outline Report on Resettlement Sites

The following are the headings of the text which I'm writing on Resettlement Sites. The headings are stipulated in the IFC Handbook for preparing a RAP and ZEMA guidelines:

1. Location of the Resettlement Sites and their characteristics, such as current land use.
2. Planning considerations namely: The proposed layouts at each site in terms of service provision as roads, foot paths, water reticulation etc.
3. The form of land tenure at each site
4. The proposed housing designs and ventilated pit latrines and their location on the plots.
5. Plot sizes and their determination
6. Assessment of the advantages and disadvantages of resettlement options at each site and the criteria for selecting the preferred option at each site.
7. Involvement of PAP's in the selection of the preferred resettlement option at each site.
8. Involvement of the PAP's in the development of acceptable housing designs and their development.
9. Description of the feasibility studies conducted to determine the suitability of the proposed resettlement sites, including natural resources assessments (soils and land use capabilities, vegetation and livestock carrying capacities, water resource surveys and environmental and social impact assessments at each site).
10. Assessment of sites requirements in terms of availability.
11. Description of mechanisms for
 - i. Procuring
 - ii. Developing and allocating plots at resettlement site including the awarding of title or user rights on them.
12. Provision of detailed description of the arrangement for site development for housing, agriculture and other needed services, including funding of the development.
13. Provision of proof that host communities have been consulted about the RAPs and their participation in the identification of likely impacts on their communities and appropriate mitigation measures, and the share of the host communities in the resettlement benefits.

19.2 RESETTLEMENT SITES MEETING ATTENDANCE LIST

<u>Resettlement Sites Mission Vision</u> <u>21st Oct 2014</u> <u>ZARI Conference Room</u>		
Name	Organisation	Contact Number and Email
1) Abram Mulenga	IDSP - Liaison Officer	0968-217569
2) MWENGWE HEART	MUFUWA MUNICIPAL COUNCIL SETTLEMENT OFFICER	0950771974 mwengweh@yahoo.com
3) PETER HANZOMA	PPSC	phanzoma@yahoo.com 0972 000 607
4) BILLI CHOMBEA	MAI	0977 204756
5) BESA MWILA	PPSC	0977524723
6) Sunford Nyendwa	PPSC	0966 312034
7) ZEBRON CHENWA	NLAL	0955915378
8) VIOLET ZULU	Mufuwa Municipal Council	0961942043
9) Babberesi Mushiwa	Mufuwa Municipal Council	0965501043
10) GEORGE MUTHANSA	PPSC	0964 225033
11) JANE NTHANI	NLAL mufuwa	0966658250
12) Sonia Simumba	Sofreco - Site facilitator	0977650889
13) MASWARI M. HAIMBACHA	SOFRECO	0977 428007
14)		
15)		

Site Visit to Settlement Sites 22 nd October, 2014		
Name	Organisation	Contact number
1) Sonia Simumba	Site facilitator - Sofreco	0977650889
2) Abram Mulega	IDSP Liaison officer	0968-217569
3) MASWAHIM-MAIMBOLWA	SOFRECO	0977428007
4) PETER HANZOMA	PPSC	0972 000602
5) GEORGE MUTHANGA	PPSC	0964225033
6) BILLY CHOMBEA	MAL	0977204756
7) JANET NTHANI	MAL	0966698250
8) BESA MUTHA	MAL PPSC	0977524723
9) Sunford Nyendwa	PPSC	0966 3120824.
10) JESSE GITHIKA	MAL	0955915378

19.3 HOUSEHOLD CENSUS FORM 1

Census form 1 will be prepared with village/zone officials and be a **complete list of the names** of all household heads in the administrative area. The list will run no doubt run to several sheets of the form.

The list will have no omissions, no duplicates and be accurate and factual in terms of names and identifiers. Each name on the list will have a unique and consecutive **identification number**. The identifiers will include **NRC** and **telephone number**.

The list will say whether or not the **household** (not necessarily the household head) **is considered resident in the village/zone**.

The list will give the **land holding area in the village/zone** as known by the village/zone administration.

19.4 HOUSEHOLD CENSUS FORM 2

Village/Zone Name

The administrative area in the irrigation scheme for which data is being collected:

For Mwomboshi:

- Kalimina;
- Hankwa;
- Toba;
- Malama.

For Lusitu:

- Sitinkwe: (note there are about 14 sub-villages, Mr Maimbolwa recorded the names)

For Musakashi:

- Administrative zones, names and boundaries not yet known

Village names should be well known. Nevertheless, some households in the enumeration area may consider themselves part of a different village and this should be reported. Query if the village is a “sub-village” of a more well-known village. If so put its name in brackets. It is important to do this to ensure that only households from villages directly affected by the project are included in the database.

On State land, villages may be less cohesive and land rights stem from the State not the Chief. Musakashi appears to be divided into “zones” for the convenience of operation of Government workers. We retain the concept of the “zone” as far as it is useful but we do not yet know the names and locations of the zones. Record the zone name given by the respondent and make a note if it is different from the zone in which you think you are.

Note that in Mwomboshi there are small areas of State land to the east of Kalimina. Be aware of this if you are carrying out interviews in this area. There may be no zones established in these areas and residents may consider

themselves part of Kalimina, even though the headman has no legal jurisdiction over this land.

Identification number

The permanent identification number will be taken from a listing of households heads provided by the village headman or camp/zone officer (Household Census Form 1).

There may be omissions from this list. If the enumerator finds him/herself interviewing a household head whose name is not on the list, the enumerator should allocate a temporary reference and refer the interview to the village headman or camp/zone officer. The official should either add the household to the village/zone list or (with justification to be written on the completed form) assign the interview to a recognised household number.

Date

Date of enumeration

Name of Household Head

Full name to be recoded, including **NRC** and **Telephone number**

Coordinates of house structure

The GPS coordinates of the main house structure should be taken (the Site Facilitator has a GPS). Make sure the GPS is using the right coordinate system: Position format should be UTM/UPS with map Datum ARC 1950. It may be necessary to take the coordinates before or after the interview, in that case make absolutely sure the enumerated household head is correctly associated with the coordinates of his/her house structure.

Main Place of Residence?

Ask if the household head considers the house structure for which you have GPS coordinates to be his/her main place of residence. If yes, write “yes”, if no write the name of the village/town where he/she considers themselves to live. Make sure this name is identifiable on CSO records.

Household Census

Write down the **name** of each person associated with the household, including those temporally absent. Report the **age** and **sex** of each. Report the **relationship with the Household Head**: normally this will be a blood relation (wife, sister, aunt, daughter etc). For polygamous households report wife 1, wife 2 according to number of years of marriage. If there is no blood relationship report what the relationship is “friend”, “guest” etc.

Report the **presence** or **absence** of members of the household reported by the household head. Query if he/she has recalled all absentees. If someone in the household is away for several weeks or more (working, school, visiting relatives) that qualifies as absence. If someone is around for a few days but normally away, then this can also be reported as “absent”. If a person is off site for a few days only, then this should be reported as “present”.

Report the **years associated with the site** – for residents this will be the number of years they have lived there. For non-residents this will be how many

years they have been visiting the area. Don't worry about reporting years of association of children.

Report the **occupation** of each household member. Old and inactive people should be called "retired". Children should be "students" if they attend school or "child" if not. Active farm workers should be recorded as "farm workers". Secondary occupations should be reported if they are given.

Highest education of each household member should be reported; it is sufficient to report "primary", "secondary", "university" "vocational" etc.

Language/ethnic group: report the principle language spoken at home by each household member.

Sickness/disabilities: report the health status of each household member, If health is generally good write "none". If someone is chronically sick report the specific complaint.

It is important that the Household Head verifies the accuracy of the information provided by signing the form, which should be countersigned by the village headman or zone chairman and the enumerator. This has to be done to establish the number of people in the village/zone at the "cut-off" point of the census. People who arrive after this may not have entitlements in the project.

19.5 HOUSEHOLD CENSUS FORM 3

Village/zone name

Should be carried forward from Census Form 2

Identification Number

Should be carried forward from Census Form 2

Parcel information within village/zone

Parcels of land are defined as discrete areas of land controlled by the household for a distinct purpose, mostly agriculture. They may be sub-divided into "plots" on which a particular purpose is carried out, usually the cultivation of a particular crop or combination of crops ("mixed cropping") in which crops may be grown together in a regular way ("inter-cropping"). Detailed information on the location and area of parcels will be collected during the cadastral survey.

It will be most important that the cadastral number given to each parcel identified in the cadastral survey can be matched to the correct household and written on the Census Form 3.

On the Census Form 3, collect the householder's estimate of the **total area** of each parcel of land controlled by the household, including the area of the house plot and house garden. This information will also be collected more accurately by the cadastral survey (including of course the location) but it will be useful to have an independent check to make sure parcels are not missed or counted twice.

For each parcel, ask the householder to give a **percentage** breakdown of **rainfed cropping, irrigated cropping and fallow**. It should sum to 100%.

On the cropped portion ask the householder to list the **main crops grown on each plot** within the parcel. If they are irrigated use the suffix “. Together this will give an indication of the number of plots. None of this information will be collected by the cadastral survey, which will focus on the parcel area and location only. The plot information will not be very accurate and there will be no way of verifying it. But it will help to estimate the area irrigated at present, the cropping intensity and the cropping pattern. These statistics will be help to estimate the present value of cropping of each household.

Collect the name of the **principle user** of each plot. This is an attempt to identify land use by for example wives who have a plot under their particular control.

Ask the householder what is the **type of tenure** for each parcel. In Mwomboshi and Lusitu this should be all or nearly “customary”. However, we may get some variants like “rented” or “share-cropped”. At Musakashi this information has to reflect whether the parcel is “leasehold with proven title”, “leasehold with no proven title”, “no proven title” or indeed other combinations, for example:

Squatter

Squatter with District Council land allocation

Letter of Offer

Title holder

Title holder with deeds

Customary rights

If the deeds have a cadastral number this should be reported if known.

Ask the householder if the household, or any members of the household has **other land available outside the village area but within the scheme** and **other land available and outside the scheme**. We should be able to attach a cadastral number to the former, as it will be included in the cadastral survey (OLIVER: HOW?). Ask the **area** of the land and the **proportion or area cropped**. Get an indication of the **location** of the land, at least to the level where it can be identified from CSO location records. Ask how **long the land has been held** and **what type of tenure** it is under (see above). We cannot get much information on this land but it will give an idea of total household land resources, particularly of non-residents in the village.

All information on cropping should relate to the 2012/13 rainy season and the 2013 dry season (for irrigation). Note we are not collect information on yields or production. Recall information is insufficiently accurate to justify the effort.

In most cases households will have other land to which they have access and in most cases share this access with other households (“common land”). This land may be inside the village/zone area or outside, please distinguish. Probably this land will have a **name** which is well known locally. An estimate of the **area** by the householder should be obtained (don't prompt for this information as it will be interesting to see how big different users of the same land think it is). Ask if the land has **access to water** (a river, spring etc. for watering stock). Ask the **number of households using the land** (again, don't prompt, it will be interesting to see the variation in views of number of users). If

the household can give an estimate of its **percentage share of access** that may also be recorded (it is another way of asking the same question as total number of users). Ask the type of common land use. We maybe need to develop a code but obvious uses are:

- 1 Grazing
- 2 Fuelwood
- 3 Fishing
- 4 Forest products
- 5 Animal products

If the **access is seasonal**, ask for the months of use. For grazing rights, ask the number of **household animals graze** there. It's not much of a question, but we may be able to deduce the total stocking intensity if we can correctly identify the common land area.