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6 PROJECT IMPACTS

6.1 INTRODUCTION

As described in Section 2.7 and in the Project ESIA¹, the EACOP Project has been designed to avoid or minimize impacts wherever possible, including through consideration of design alternatives, pipeline routing, siting of facilities, technology and construction techniques. Nevertheless, some physical and economic displacement impacts will arise from Project land acquisition and these are described in this Chapter. They include impacts on:

- land and the various recognizable interests in land;
- dwellings, including physical displacement;
- other structures, such as ancillary domestic structures and business structures;
- communal and institutional facilities;
- crops and economic trees;
- livelihood activities – economic displacement;
- public utilities and infrastructure;
- forests, woodlots and other natural resources;
- wetlands, rivers and riverbanks;
- cultural heritage assets, including graves and shrines; and
- vulnerable households.

The methods used to identify project impacts include: stakeholder engagement, cadastral surveys, asset inventory, socio-economic household surveys, cultural heritage surveys and forestry surveys.

6.2 SUMMARY OF IMPACTS

A summary of the impacts is provided in below and these are detailed in subsequent sub-sections. In summary:

- The pipeline will run for 296 km in Uganda from Kabaale to the Uganda-Tanzania border traversing:
 - Ten (10) districts;
 - 27 sub-counties and 3 town councils;
 - 171 villages;
- Project gross land requirements total 2,740 acres, 92% of which relates to the pipeline corridor and 8% to the Priority Areas.
- The Project has valued within the Valuation reports and will compensate for approximately 2,321 acres of land, much which under some form of agricultural land use. The remaining 419 acres relates to: land already owned by government which will not be acquired, including national forest reserve and wetland areas; and land which currently has not been surveyed and valued (i.e. due to ongoing rectification issues, disputes etc.).
- Residual/orphaned land considered to not be viable (see Section 7.3.2) is still to be fully

¹ EACOP ESIA Uganda Section; January 2019

assessed, surveyed and valued (see Section 7.3.2).

- A total of 3,792 PAPs are affected, comprising 3,096 PAPs with land interests and 696 licensees with structures, crops or trees growing on land owned by other PAPs. Assessment of vulnerable and potentially vulnerable households based on pre-existing vulnerability factors affected by the Project land acquisition program identified 663 PAHs considered vulnerable and a further 256 PAHs considered potentially vulnerable.
- The 3,096 PAPs with land interests hold a total of 4,038 different landowner interests in affected land (i.e. freehold, leasehold, customary, mailo, kibanja, bonafide and lawful occupants). The higher number of land interests relative to the number of PAPs with land interests reflects the fact that PAPs can own more than one affected area and that certain land interests (kibanja, lawful and bonafide occupants) overlap other ownership interests. It should be noted that kibanja owners are either lawful occupants or bonafide occupants. Kibanja as a term is particular to Buganda region and emanates from the repealed Busulu Envujjo Law.
- In addition, there are a total of 72 public institutional interests in land affected.
- Reflecting the linear nature of the Project, the majority of affected land areas will lose only a small proportion of their areas, with 70% losing less than 30% of their area, and only 15% of affected land areas losing 50% or more. This means that the livelihood impacts on the majority of PAPs will be relatively low, and PAPs will be able to continue a reasonable proportion of their land based livelihoods on their remaining.
- PAPs will though experience some level of economic displacement in the form of impacts on crops and trees, and a total of 3,466 PAPs (91% of PAPs) own crops and/or economic trees which are affected by the pipeline.
- Affected persons were noted to farm seasonal crops as part of their livelihood activities, however as these will be harvested prior to displacement these were not recorded for valuation purposes.
- The pipeline route and sites of AGIs have been carefully selected to minimize physical displacement. A total of 198 PAHs will experience some degree of physical displacement, i.e. loss of dwelling, which represents only 5% of all PAPs.
- A total of 1,376 structures owned by non-Institutional PAPs will be affected, including:
 - 219 residential dwelling structures;
 - 1,157 other structures, such as grain stores, livestock kraals, latrines, incomplete structures (33).
- A total of 34 structures owned by Institutions will be affected, including:
 - 2 classroom blocks;
 - 3 Church Houses and 2 Mosques; and
 - 27 other structures, such as latrines, ablution blocks, fences and bee hives.
- The existing affected houses are small and generally self-built by PAPs (and/or by their households):
 - Approximately 84% of the existing houses are less than 41m² (the smallest replacement House Type 1 – see Chapter 8).
 - Approximately 50% of existing houses are less than 20m² with a significant proportion of these much smaller than this.
 - Approximately 30% of existing houses are less than 15m².
- There are 499 marked graves affected by the Project. In addition, during the RAP surveys 168 unmarked grave records were noted for the Project record during the surveys. These

will be investigated further during the implementation and once verified appropriately compensated for.

- There are 15 verified shrines affected by the Project, comprising: 8 built shrines and 7 verified natural shrines. In addition, there are a further 9 natural shrines which have not yet been verified or valued. The methodology for verification of the natural shrines will be agreed with MEMD and relevant ministries, departments and agencies.
- The Project affects approximately 36 acres of land in the Taala Central Forest Reserve in Kyankwanzi District which the pipeline corridor traverses.
- The pipeline will cross a number of rivers, including the River Kafu, River Nabakazi and River Katonga and wetlands towards the Tanzania border and north-western corner of Lake Victoria.
- Project land acquisition program will affect a few public facilities buildings comprising two classrooms: one for a nursery school² in Mubende and one associated with a school in Sembabule.
- The pipeline will cross a number of public infrastructure crossings, including:
 - Roads:
 - 15 National roads;
 - 45 District roads; and
 - 234 community access roads.
 - One railway line under the jurisdiction of Uganda Railway Corporation crossed in the village of Kalyamawolu in Gomba district, railway line has been non-functional for a long time and runs from Kampala to Kasese;
 - Powerlines:
 - 4 transmission lines (high voltage) under the jurisdiction of UETCL; and
 - 16 distribution lines under the jurisdiction of UMEME and REA.

The figures provided are accurate at the time of issuing this RAP. However, modifications to figures may occur, for example if PAPs query their valuations and amendments are made. Any changes will be captured in a separate register of changes.

² MCPY-02 affects a classroom block however, this block is currently closed as could not meet the district requirements for permanent buildings.

Table 6-1 Project Impacts along the Pipeline and Priority Areas

No	Impacts	Hoima	Kikuube	Kakumiro	Kyankwanzi	Mubende	Gomba	Sembabule	Lwengo	Rakai	Kyotera	MCPY1 Kakumiro	MCPY2 Mubende	MCPY3 Sembabule	MCPY4 Kyotera	TOTAL
	Length of pipeline (km)	5.4	30.4	33.4	14.7	63.7	17.0	52.6	26.2	19.9	32.3	-	-	-	-	296
1	Gross land take (Acres) ³	74 ⁴	252	264	120	565	139	473	217	163	256	47	47	61	62	2,740
2	Total land take to be compensated for within Valuation Reports (excludes public land and areas unsurveyed due to rectification ongoing/disputes) (Acres)	34	233	222	73	472	133	373	198	142	232	47	47	61	54	2,321
2a	% of total land take to be compensated for by District & PA	1%	10%	10%	3%	20%	6%	16%	9%	6%	10%	2%	2%	3%	2%	100%
3	Total number of PAPs	92	410	336	227	650	44	433	565	371	524	41	11	50	38	3,792
3a	% of total no. PAPs by District & PA	2%	11%	9%	6%	17%	1%	12%	15%	10%	14%	1%	0%	1%	1%	100%
4	No. of PAPs with affected land interests ⁵	73	338	290	145	545	25	356	452	316	444	33	8	37	34	3,096
5	Number of Licensees ⁶	19	72	46	82	105	19	77	113	55	80	8	3	13	4	696
6	Total no. of affected land owner interests	78	354	336	194	773	31	493	603	442	590	28	9	51	56	4,038
7	No. of Institutional PAPs	0	0	2	4	7	3	21	2	7	19	0	2	1	4	72
8	PAPs with loss of crops and/or economic trees	78	359	364	209	642	35	407	500	304	439	37	16	45	31	3,466
8a	PAPs with loss of Crops	71	326	336	208	573	20	336	444	264	401	31	15	42	25	3,092

³ These are gross land takes that include government land like central forest reserve, wetlands, streams, etc. This does not compare with land in valuation report, because what is indicated in the valuation report includes mostly land to be compensate. It does not land not surveyed or valued due to ongoing rectification issues, disputes and land not yet accessible

⁴ Includes approximately 40 acres within Kabaale Industrial Park, see Table 2-3, Chapter 2.

⁵ Land owner interests refers to legally recognizable rights or claims to land ownership, covering: Mailo, Customary, Freehold, Leasehold, Lawful Occupant, Bonafide Occupant, Kibanja, Public Land and land areas of Unknown ownership. The number of PAPs with land owner interests is lower than the number of interests because some PAPs have multiple land ownership interests.

⁶ Licensees do not possess an ownership interest in land. They typically own crops, trees or structures on land owned by others.

No	Impacts	Hoima	Kikuube	Kakumiro	Kyankwanzi	Mubende	Gomba	Sembabule	Lwengo	Rakai	Kyotera	MCPY1 Kakumiro	MCPY2 Mubende	MCPY3 Sembabule	MCPY4 Kyotera	TOTAL
8b	PAPs with loss of Economic Trees	57	259	205	157	346	28	222	255	195	257	22	4	30	25	2,062
9	Total no. of physically displaced PAHs (loss of dwelling)	8	43	15	13	58	1	18	18	7	13	0	1	2	1	198
9a	No. of Physically Displaced PAHs with legally recognizable rights or claims to land ⁷	5	33	15	3	51	1	17	15	7	12	0	1	1	1	162
9b	No. of Physically Displaced PAHs who are Licensees	3	10	0	3	7	0	1	3	0	1	0	0	1	0	29
9c	No. of Physically Displaced PAHs within Central Forest Reserve	0	0	0	7	0	0	0	0	0	0	0	0	0	0	7
10	Potentially Vulnerable PAHs ⁸	26	88	80	40	170	9	97	129	83	141	18	6	17	15	919
11	No. of Absent /Absentee PAPs	0	0	1	2	11	1	9	9	18	15	0	0	0	0	66
12	No. of graves affected	4	12	12	25	50	0	33	115	82	164	0	0	0	2	499
13a	No. of built shrines	0	0	0	0	0	0	0	2	4	1	0	0	1	0	8
13b	No. of natural shrines (verified) ⁹	0	0	2	0	2	0	1	0	2	0	0	0	0	0	7
14	No. of Church houses or Mosques affected	0	2	0	0	1	0	0	0	0	2	0	0	0	0	5
15	No. of affected Schools/Educational buildings and Community Healthcare Facilities	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
16	No. of Institutions/Public Utilities with affected land	0	0	2	4	7	3	21	2	7	19	0	2	1	4	72

⁷ Kyankwanzi District includes 7 physically displaced PAHs in Taala Central Forest Reserve who do not have legally recognizable rights or claims to the land they occupy.

⁸ As well as the potentially vulnerable PAHs shown in Table 6.1, PAHs with <0.5 acres remaining or their land parcel is affected by more than 80% by the Project land take will also be treated as potentially vulnerable – See Entitlement Framework in Chapter 7.

⁹ In addition to the 7 natural shrines which have been verified and valued, there are a further 9 natural shrines which have been identified from engagements with PAPs but not yet verified: 1 in Kikuube District, 1 in Kakumiro District, 6 in Rakai District and 1 in Kyotera District.

6.3 IMPACTS ON LAND

6.3.1 Land Requirements and Land Use Context

Land Requirements:

As described in Chapter 2, the export pipeline involves 296 km of buried pipeline running from PS-1 in Hoima District to Kyotera District where it crosses the border into Tanzania. A 30 m pipeline construction corridor is being acquired by the GoU on a permanent basis, as well as land for priority areas and access roads. Following construction, a permanent 10 m wide corridor is required for the safe operation and maintenance of the pipeline set within the 30 m construction corridor. During operation, this corridor will be kept clear from deep rooting vegetation and permanent structures, however, operation of the pipeline will not present a barrier to people and livestock. Once the pipeline is buried, markers planted at regular intervals will be visible along the corridor.

The gross Project land requirement totals 2,740 acres, 92% of which relates to the pipeline corridor and 8% to the Priority Areas. Of this total, the Project has valued and will compensate for approximately 2,321 acres of land, since the remaining 419 acres relates to land already owned by government, including road crossings, national forest reserve and wetland areas, and a very limited area of land still to be valued and surveyed.¹⁰

The export pipeline originates at the PS-1 located at the planned Kabaale Industrial Park, in Hoima District.

- Initially, it crosses relatively low terrain with undulating topography characterised by widespread cropland, settlement and transport infrastructure between Hoima and Mubende districts.
- In Hoima District, the corridor passes in between Wambabya and Bugoma Forest Reserves but does not impact these reserves, and traverses through a section of Taala Central Forest Reserve (CFR) in Kyankwanzi District heavily modified by human activity, and crosses near the eastern border of Kasana-Kasambya Forest Reserve in Mubende District.
- There are watercourse crossings including the Kafu River between Hoima and Kakumiro Districts, Nabakazi River between Mubende and Gomba Districts, Katonga River between Gomba and Sembabule Districts, and Kibale and Jemakunya Rivers in Kyotera District.
- The pipeline corridor traverses gently undulating grass and farmland, hills with open plateaus, open grassland, wetlands in Gomba and Sembabule Districts and a relatively flat landscape as it runs towards Mutukula in Kyotera District near the border with Tanzania. The corridor avoids the large local settlement of Mutukula at the border as it progresses into Tanzania.
- On the approach to the Tanzania border, and the north-western corner of Lake Victoria, the corridor crosses a substantial zone of wetlands in a high average rainfall zone that is

¹⁰ There is some ongoing boundary rectification work and some very small areas where surveys were not possible due to disputes. Therefore, there are a very limited areas of land where surveys and valuation are still to be completed.

also characterised by almost unbroken crop land, a substantial proportion of which is under rice cultivation, cattle grazing land and settlement.

Land Based Livelihoods Context:

The main livelihood activity of the Project-affected communities is subsistence agriculture. Most settlements are concentrated along national and secondary roads. Villages often have a central trading place in which main business and social activities take place. Some districts along the pipeline are experiencing pockets of urbanization having become attractive to rural migrants due to employment and business opportunities and relatively better infrastructure, including Hoima municipality and the urban centres Mbirizi and Kinono in Lwengo District.

Most farming activities are small-scale and characterised by low-input, low-output subsistence farming with trading of surplus crops. Crop production is predominantly rain fed as irrigation infrastructure is absent in the majority of districts traversed by the pipeline corridor. Challenges faced by households engaged in crop farming include limited access to alternative sources of income, lack of education, skills and experience.

Livestock rearing is an important economic activity at household level. The main livestock species are cattle, goats, sheep, poultry, pigs and donkeys. Key challenges include the prevalence of diseases and livestock theft.

Other livelihood activities within the wider Project-affected districts include:

- In Hoima District, fishing mainly from Lake Albert, mining of gold along Kafu River basin, hematite, kaolin and clays mainly used for bricks and pottery.
- In Kakumiro, because of the relatively dry climate, cattle ranching for beef and dairy farming are favourable activities. Fish farming is being implemented increasingly in the district as well.
- In Kyankwanzi, logging/charcoal-making is one of the key major economic activities practised in the district along with crop husbandry and livestock keeping.
- In Sembabule, other livelihood activities include tourism e.g. forest reserves with animals like monkey, sitatunga, cob, bushbuck, reedbuck, waterbuck and various other antelope, leopard, wild pig, baboon, hyena, buffalo and squirrels, amongst others.
- In Lwengo the means of earning a livelihood include livestock husbandry along with the fishing trade and tree felling and pit sawing. Fish farming in Kyotera district is being implemented increasingly as well.
- Milk production and some processing is a key activity in Sembabule and Gomba districts

Land Tenure Context:

As described in Chapter 3, the land tenure systems in Uganda recognise the interests in land of both land 'owners' and certain land occupants (such as lawful and bonafide occupants and kibanja holders). Therefore, land in Uganda can be 'encumbered' with overlapping interests in land held by various individuals or entities, as well as other land users (such as licensees and informal tenancy arrangements).

The pipeline traverses land under the four tenure systems (customary, mailo, freehold and leasehold as well as some land where the tenure is unknown) and some Public Land. The tenure and interests held in the affected land in different Districts is summarised in Table 6-2.

Table 6.3 shows the affected land areas to be compensated for (acres) by tenure type and Table 6.4 shows percentage of areas under different tenure types. These show that:

- customary land ownership is the predominant affected tenure type in Hoima, Kikuube and Kakumiro;
- Private Mailo is the predominant affected tenure type in Kyankwanzi, Mubende, Lwengo, Rakai and Kyotera, along with Public Land in Kyankwanzi;
- Leasehold is the predominant affected tenure type in Gomba, along with Private Mailo; and
- Freehold, Leasehold and Public Land are the predominant affected tenure types in Sembabule.

There are also other land users, mainly licensees, present on some landowners' parcels, as shown in Table 6-1, with relatively high numbers of licensees relative to the number of PAPs with land tenure interests in Kyankwanzi and Gomba.

Table 6-2 Numbers of Affected Land Areas - by type of land interest

District / Priority Area:	Mailo	Customary	Freehold	Leasehold	Lawful Occupant	Bonafide Occupant	Kibanja ^[1]	Public Land	Unknown owners	TOTAL Affected Land Interests
Hoima	0	75	1	0	2	0	0	0	0	78
Kikuube	0	346	8	0	0	0	0	0	0	354
Kakumiro	11	232	12	0	5	0	74	2	0	336
Kyankwanzi	21	0	0	0	0	18	150	5	0	194
Mubende	138	0	13	42	215	0	356	9	0	773
Gomba	7	0	0	8	0	1	10	3	2	31
Sembabule	18	0	48	25	140	185	20	22	35	493
Lwengo	79	0	6	3	2	59	442	5	7	603
Rakai	76	0	9	8	21	32	293	3	0	442
Kyotera	68	0	10	11	46	61	378	10	6	590
MCPY1	1	0	1	0	21	0	5	0	0	28
MCPY2	5	0	0	1	0	0	2	1	0	9
MCPY3	5	0	3	0	3	0	40	0	0	51
MCPY4	6	0	2	3	5	20	16	4	0	56
TOTAL	435	653	113	101	460	376	1,786	64	50	4,038
<i>Encumbered</i>	258		28	37				7		330
% of Total	11%	16%	3%	3%	11%	9%	44%	2%	1%	100%

Note 1: Kibanja owners are either lawful or bonafide occupants. The term relates to the lawful occupants and bonafide occupants on Mailo land predominantly in the Buganda region.

Table 6-3 Affected (Valued) Land Areas (acres) - by type of land interest

District / Priority Area:	Mailo	Cust-omary	Free-hold	Lease-hold	Lawful Occu-pant	Bonafide Occu-pant	Kibanja ^[1]	Public Land	Un-known	TOTAL Valued Land Area (acres) ^[2]	% of total
Hoima	-	30	4	-	1	-	-	-	-	34	1%
Kikuube	-	224	9	-	-	-	-	-	-	233	10%
Kakumiro	47	139	36	-	2	-	42	3	-	222	10%
Kyankwanzi	73	-	-	-	-	11	71	47	-	73	3%
Mubende	278	-	54	140	113	-	188	45	-	472	20%
Gomba	47	-	-	77	-	0	1	2	9	133	6%
Sembabule	39	-	151	120	66	99	8	105	63	373	16%
Lwengo	165	-	9	8	1	20	153	19	16	198	9%
Rakai	108	-	19	15	10	30	91	20	-	142	6%
Kyotera	124	-	65	29	17	23	109	24	14	232	10%
MCPY1	6	-	41	-	41	-	6	-	-	47	2%
MCPY2	15	-	-	32	-	-	0	0	-	47	2%
MCPY3	11	-	49	-	0	-	13	-	-	61	3%
MCPY4	37	-	1	16	2	7	35	8	-	54	2%
TOTAL	951	393	439	438	253¹	191¹	718¹	274	101	2,321	100%
<i>Encumbered</i>	661	-	57	72	-	-	-	46	-	836	-
% of Total	41%	17%	19%	19%	-	-	-	-	4%	100%	-

Note 1: Kibanja owners are either lawful or bonafide occupants. The term relates to the lawful occupants and bonafide occupants on Mailo land predominantly in the Buganda region.

Note 2: The total affected valued land area is summed from Mailo, Freehold, Leasehold, Customary and Unknown Owners. Areas relating to Lawful Occupants, Bonafide Occupants and Kibanja interests are superimposed on the affected land areas and therefore not summed. Public land is not valued for compensation. There may be rounding errors in summation of acreages.

Table 6-4 Affected (Valued) Land Areas - by type of land interest (percentage of acres)

District / Priority Area:	Mailo	Customary	Freehold	Leasehold	Lawful Occupant	Bonafide occupant	Kibanja	Public Land	Unknown owners	TOTAL Affected (Valued) Land Interests
Hoima	0%	1%	0%	0%	-	-	-	-	0%	1%
Kikuube	0%	10%	0%	0%	-	-	-	-	0%	10%
Kakumiro	2%	6%	2%	0%	-	-	-	-	0%	10%
Kyankwanzi	3%	0%	0%	0%	-	-	-	-	0%	3%
Mubende	12%	0%	2%	6%	-	-	-	-	0%	20%
Gomba	2%	0%	0%	3%	-	-	-	-	0%	6%
Sembabule	2%	0%	7%	5%	-	-	-	-	3%	16%
Lwengo	7%	0%	0%	0%	-	-	-	-	1%	9%
Rakai	5%	0%	1%	1%	-	-	-	-	0%	6%
Kyotera	5%	0%	3%	1%	-	-	-	-	1%	10%
MCPY1	0%	0%	2%	0%	-	-	-	-	0%	2%
MCPY2	1%	0%	0%	1%	-	-	-	-	0%	2%
MCPY3	0%	0%	2%	0%	-	-	-	-	0%	3%
MCPY4	2%	0%	0%	1%	-	-	-	-	0%	2%
TOTAL	41%	17%	19%	19%	-	-	-	-	4%	100%

The size of land areas affected by the Project are shown in Table 6-5 and Table 6-6:

- 41% of all Project affected land areas lose less than or equal to 0.25 acre;
- 18% of all Project affected land areas lose between 0.25 and ≤ 0.5 acre; and
- 18% of all Project affected land areas lose between 0.5 and ≤ 1 acre.

Table 6-5 Area of Land Lost - number of affected land areas by acreage range¹¹

	≤ 0.25 acre	$> 0.25 \leq 0.5$ acre	$> 0.5 \leq 1$ acre	$> 1 \leq 1.5$ acres	$> 1.5 \leq 3$ acres	> 3 acres
Hoima	40	20	8	5	4	1
Kikuube	107	71	92	24	42	3
Kakumiro	119	58	63	23	27	17
Kyankwanzi	56	21	42	17	17	6
Mubende	216	99	111	48	68	66
Gomba	11	1	1	0	2	12
Sembabule	157	74	56	24	40	49
Lwengo	245	90	90	24	36	22
Rakai	139	85	51	29	22	15
Kyotera	231	88	88	26	25	18
MCPY1	1	2	2	9	7	7
MCPY2	1	0	0	0	0	4
MCPY3	27	11	5	1	0	2
MCPY4	13	5	0	2	7	13
TOTAL	1,363	625	609	232	297	235

Table 6-6 Area of Land Lost - number of affected land areas by acreage range (%)

	≤ 0.25 acre	$> 0.25 \leq 0.5$ acre	$> 0.5 \leq 1$ acre	$> 1 \leq 1.5$ acres	$> 1.5 \leq 3$ acres	> 3 acres
Hoima	51%	26%	10%	6%	5%	1%
Kikuube	32%	21%	27%	7%	12%	1%
Kakumiro	39%	19%	21%	7%	9%	6%
Kyankwanzi	35%	13%	26%	11%	11%	4%
Mubende	36%	16%	18%	8%	11%	11%
Gomba	41%	4%	4%	0%	7%	44%
Sembabule	39%	19%	14%	6%	10%	12%
Lwengo	48%	18%	18%	5%	7%	4%
Rakai	41%	25%	15%	9%	6%	4%
Kyotera	49%	18%	18%	5%	5%	4%
MCPY1	4%	7%	7%	32%	25%	25%
MCPY2	20%	0%	0%	0%	0%	80%
MCPY3	59%	24%	11%	2%	0%	4%
MCPY4	33%	13%	0%	5%	18%	33%
TOTAL	41%	18%	18%	7%	9%	7%

Table 6-7 and Table 6-8 show the percentages of land areas affected by the Project. Reflecting the linear nature of the pipeline, the majority of land areas have only a small percentage of the land area affected:

- 34% of land areas have less than 10% of their area affected by the Project;

¹¹ Note: the total number of affected land areas is lower than Row 6 in Table 6-1 because Table 6-9 does not include Institutional land owners and some valuations have missing land area data.

- 55% of land areas have less than 20% of their area affected by the Project;
- 70% of land areas have less than 30% of their area affected by the Project; and
- only 15% of land areas have 50% or more of their area affected by project.

Understandably, at the MCPYs, a higher percentage of land areas are affected.

Table 6-7 Percentage of Land Areas Affected by Project (numbers of land areas falling into percentage bands)¹²

	0% - 10%	10% - 20%	20% - 30%	30% - 40%	40% - 50%	50% - 60%	60% - 70%	70% - 80%	80% - 90%	90% - 100%
Hoima	25	24	9	6	4	5	2	1	1	1
Kikuube	134	83	44	24	24	11	7	4	4	4
Kakumiro	108	67	52	33	13	5	9	5	5	10
Kyankwanzi	51	43	29	16	4	7	4	2	0	3
Mubende	226	143	87	42	31	16	9	9	14	31
Gomba	19	1	1	0	0	1	2	0	0	3
Sembabule	164	71	40	39	21	21	12	9	11	12
Lwengo	145	75	91	57	46	30	20	14	10	19
Rakai	106	65	57	30	23	20	17	11	5	7
Kyotera	120	97	79	60	33	21	19	16	12	19
MCPY1	2	1	2	0	1	1	1	1	0	19
MCPY2	1	0	0	1	0	1	0	0	0	2
MCPY3	18	11	4	4	1	0	1	1	1	5
MCPY4	10	13	5	1	2	1	2	1	1	4
TOTAL	1129	694	500	313	203	140	105	74	64	139

Table 6-8 Percentage of Land Areas Affected by Project (percentage of total)

	0% - 10%	10% - 20%	20% - 30%	30% - 40%	40% - 50%	50% - 60%	60% - 70%	70% - 80%	80% - 90%	90% - 100%
Hoima	32%	31%	12%	8%	5%	6%	3%	1%	1%	1%
Kikuube	40%	24%	13%	7%	7%	3%	2%	1%	1%	1%
Kakumiro	35%	22%	17%	11%	4%	2%	3%	2%	2%	3%
Kyankwanzi	32%	27%	18%	10%	3%	4%	3%	1%	0%	2%
Mubende	37%	24%	14%	7%	5%	3%	1%	1%	2%	5%
Gomba	70%	4%	4%	0%	0%	4%	7%	0%	0%	11%
Sembabule	41%	18%	10%	10%	5%	5%	3%	2%	3%	3%
Lwengo	29%	15%	18%	11%	9%	6%	4%	3%	2%	4%
Rakai	31%	19%	17%	9%	7%	6%	5%	3%	1%	2%
Kyotera	25%	20%	17%	13%	7%	4%	4%	3%	3%	4%
MCPY1	7%	4%	7%	0%	4%	4%	4%	4%	0%	68%
MCPY2	20%	0%	0%	20%	0%	20%	0%	0%	0%	40%
MCPY3	39%	24%	9%	9%	2%	0%	2%	2%	2%	11%
MCPY4	25%	33%	13%	3%	5%	3%	5%	3%	3%	10%
TOTAL	34%	21%	15%	9%	6%	4%	3%	2%	2%	4%

Table 6-9 and Table 6.10 show the areas of land remaining in Project affected land parcels: (PAPs may have other land parcels not affected by the Project). Nineteen percent (19%) of land areas have less than 0.25 acre of land remaining.

¹² Note: the total number of affected land areas is lower than Row 6 in Table 6-1 because Table 6-9 does not include Institutional land owners and some valuations have missing land area data.

Table 6-9 Areas of Remaining Land – by acreage range¹³

	≤ 0.25 acre	> 0.25 ≤ 0.5 acre	> 0.5 ≤ 1 acre	> 1 ≤ 1.5 acres	> 1.5 ≤ 3 acres	>3 acres
Hoima	6	10	23	7	11	21
Kikuube	25	24	42	36	49	163
Kakumiro	50	26	36	30	48	117
Kyankwanzi	14	15	20	15	29	66
Mubende	113	40	57	40	87	271
Gomba	8	1	0	0	2	16
Sembabule	69	52	56	31	33	159
Lwengo	126	84	72	44	55	126
Rakai	64	53	52	29	50	93
Kyotera	109	66	91	45	57	108
MCPY1	19	0	0	3	0	6
MCPY2	2	0	0	0	0	3
MCPY3	11	4	6	2	5	18
MCPY4	10	6	2	2	3	17
TOTAL	626	381	457	284	429	1,184

Table 6-10 Areas of Remaining Land – by acreage range (%)

	≤ 0.25 acre	> 0.25 ≤ 0.5 acre	> 0.5 ≤ 1 acre	> 1 ≤ 1.5 acres	> 1.5 ≤ 3 acres	>3 acres	TOTAL
Hoima	8%	13%	29%	9%	14%	27%	100%
Kikuube	7%	7%	12%	11%	14%	48%	100%
Kakumiro	16%	8%	12%	10%	16%	38%	100%
Kyankwanzi	9%	9%	13%	9%	18%	42%	100%
Mubende	19%	7%	9%	7%	14%	45%	100%
Gomba	30%	4%	0%	0%	7%	59%	100%
Sembabule	17%	13%	14%	8%	8%	40%	100%
Lwengo	25%	17%	14%	9%	11%	25%	100%
Rakai	19%	16%	15%	9%	15%	27%	100%
Kyotera	23%	14%	19%	9%	12%	23%	100%
MCPY1	68%	0%	0%	11%	0%	21%	100%
MCPY2	40%	0%	0%	0%	0%	60%	100%
MCPY3	24%	9%	13%	4%	11%	39%	100%
MCPY4	25%	15%	5%	5%	8%	43%	100%
TOTAL	19%	11%	14%	8%	13%	35%	100%

6.4 IMPACTS ON HOUSES – PHYSICAL DISPLACEMENT

Whilst the project has been designed to minimize impacts on housing, Project land take will

¹³ Note: the total number of affected land areas is lower than Row 6 in Table 6-1 because Table 6-7 does not include Institutional land owners and some valuations have missing land area data.

result in physical displacement (loss of dwelling) of 198 households, representing 5% of all PAPs.

As shown in Table 6-11, 29% of these households are in Mubende District and 22% are in Kikuube District. A total of 219 occupied dwellings are affected, with 21 houses owned by PAHs who lose more than one house.

Table 6-11 Number of Physically Displaced PAHs per District

District / Priority Area:	Number of Physically Displaced PAHs	% of Physically Displaced Households	Number of affected houses:	Multiple houses (i.e. PAPs have more than one house):
Hoima	8	4%	12	4
Kikuube	43	22%	48	5
Kakumiro	15	8%	16	1
Kyankwanzi	13	7%	17	4
Mubende	58	29%	60	2
Gomba	1	1%	1	0
Sembabule	18	9%	20	2
Lwengo	18	9%	19	1
Rakai	7	4%	7	0
Kyotera	13	7%	14	1
MCPY1	0	0%	0	0
MCPY2	1	1%	2	1
MCPY3	2	1%	2	0
MCPY4	1	1%	1	0
TOTAL	198	100%	219	21

Of the 219 dwellings, 9 in Kyankwanzi District are owned by 7 households living in the Taala Central Forest Reserve informally. These 7 households are recorded as physically displaced, but are categorized as Category (iii) PAPs under PS5¹⁴, so will not be eligible for replacement housing option, but will be eligible for monetary compensation (plus Livelihood Restoration and resettlement assistance) – see Chapter 7 and 8 for further details. The Project will work with the District and other relevant authorities to identify locations outside of forest reserves and other protected areas where these PAPs could self-relocate and obtain the necessary authorizations. The Project will support these PAPs to relocate so that they can resettle without facing the risk of forced eviction.

In addition, 33 of the 219 dwellings belong to 29 physically displaced households who are licensees, with no recognizable legal rights or claims to the land they occupy (see Table 6-1 above). These households are eligible for monetary compensation, and eligibility for an in-kind compensation replacement house option is to be confirmed on a case-by-case basis: see Chapter 7 and 8 for further details.

¹⁴ IFC PS5 Paragraph 17: Category (iii) PAPs are those who have no recognizable legal right or claim to the land or assets they occupy or use.

There are 162 physically displaced PAHs who do have legally recognizable rights or claims to land they occupy, and who are eligible for replacement housing.

The sizes of affected dwellings are shown in Table 6-12. Generally, the houses are small and self-built by PAPs (and/or their households):

- Approximately 84% of affected houses are less than 41m² (the smallest replacement House Type 1 – see Chapter 8).
- 14% of affected houses are less than 10 m² in area;
- 30% of existing houses are less than 15 m² ;
- 50% of affected houses are less than 20 m² in area;
- 71% are less than 30 m² in area.

Table 6-12 Numbers of Affected Houses by House Size Range (house area m²)¹⁵

District / Priority Area:	1 to 10 m ²	10 to 20 m ²	20 to 30 m ²	30 to 40 m ²	40 to 50 m ²	over 50m ²	TOTAL	% of total
Hoima	2	4	1	2	1	2	12	4%
Kikuube	12	20	8	3	3	2	48	22%
Kakumiro	2	6	4	2	1	1	16	8%
Kyankwanzi	2	3	1	1	1	0	8	7%
Mubende	9	22	17	6	5	1	60	29%
Gomba	0	0	0	1	0	0	1	1%
Sembabule	0	10	2	2	4	2	20	9%
Lwengo	0	5	7	4	2	1	19	9%
Rakai	0	1	2	1	1	2	7	4%
Kyotera	1	3	2	4	0	4	14	7%
MCPY1	0	0	0	0	0	0	0	0%
MCPY2	0	0	1	0	0	1	2	1%
MCPY3	1	1	0	0	0	0	2	1%
MCPY4	0	1	0	0	0	0	1	1%
TOTAL	29	76	45	26	18	16	210	100%

¹⁵ 210 houses are analyzed in the house size range table not including the 9 house structures within the Central CFR in Kyankwanzi.

Table 6-13 Numbers of Affected Houses by House Size Range - Percentages:

District / Priority Area:	1 to 10 m ²	10 to 20 m ²	20 to 30 m ²	30 to 40 m ²	40 to 50 m ²	over 50m ²	TOTAL
Hoima	17%	33%	8%	17%	8%	17%	100%
Kikuube	25%	42%	17%	6%	6%	4%	100%
Kakumiro	13%	38%	25%	13%	6%	6%	100%
Kyankwanzi	25%	38%	13%	13%	13%	0%	100%
Mubende	15%	37%	28%	10%	8%	2%	100%
Gomba	0%	0%	0%	100%	0%	0%	100%
Sembabule	0%	50%	10%	10%	20%	10%	100%
Lwengo	0%	26%	37%	21%	11%	5%	100%
Rakai	0%	14%	29%	14%	14%	29%	100%
Kyotera	7%	21%	14%	29%	0%	29%	100%
MCPY1	-	-	-	-	-	-	-
MCPY2	0%	0%	50%	0%	0%	50%	100%
MCPY3	50%	50%	0%	0%	0%	0%	100%
MCPY4	0%	100%	0%	0%	0%	0%	100%
TOTAL	14%	36%	21%	12%	9%	8%	100%

The affected houses range from small basic structures of traditional design and constructed with local materials such as sticks, mud, and straw, to houses with burnt brick walls and corrugated sheet metal roofs, to very few more substantial buildings with concrete plinths, rendered cement block walls, windows and doors. Examples of typical house types are shown in Figure 6-1.





Figure 6-1 Examples of Affected House Structure

6.5 IMPACTS ON OTHER STRUCTURES

As shown in Table 6-14, as well as the 219 dwellings where households are subject to physical displacement, there are 1,157 other affected structures owned by PAPs (excluding the 499 graves and 15 verified shrines), including:

- 33 incomplete dwellings;
- 400 ancillary domestic structures such as servants quarters, kitchens, bath enclosures, pit latrines and stores;
- 47 agricultural structures, such as tobacco barns (all 19 of which are in Hoima and Kikuube), sheds, and field shelters;
- 189 beehives (over 80% of which are in Hoima, Kikuube and Kyotera);
- 131 livestock & animal structures (e.g. goat sheds, livestock kraals, pig sty, fishpond);
- 328 fences, live fences and gates; and
- 29 water source structures, such as water dams, boreholes and springs.

Examples are shown in Figures 6-2 to 6.5.

Incomplete House:



Pit latrine:



Kitchen:



Plate rack:



Bath structure:



Kitchen:



Figure 6-2 Examples of Affected Ancillary Domestic Structures

Green house:



Bee hive:



Field shed:



Fence:



Live fence:



Tobacco barn:



Figure 6-3 Examples of Affected Agricultural Structures

Cattle drinking trough:



Poultry house:



Pig sty:



Cattle dam:



Pig troughs:



Cattle dip:



Figure 6-4 Examples of Affected Livestock Structures

Community Borehole:



Shallow well:



Spring well:



Figure 6-5 Examples of Affected Water Source Structures:

Table 6-14 Summary of Affected Structures owned by PAPs

Structures:	Hoima	Kikuube	Kakumiro	Kyankwanzi	Mubende	Gomba	Sembabule	Lwengo	Rakai	Kyotera	MCPY1	MCPY2	MCPY3	MCPY4	TOTAL
HOUSES & DOMESTIC STRUCTURES:															
Residential Houses	12	47	16	16	58	1	20	19	7	14	0	1	2	1	214
Residential cum Commercial House	0	1	0	1	2	0	0	0	0	0	0	0	0	0	4
Commercial cum Residential House	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Incomplete House	0	12	6	1	5	0	2	1	2	2	0	1	1	0	33
Unoccupied House	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Servants Quarters	1	0	4	0	1	1	8	0	2	0	0	0	0	0	17
Kitchen	3	23	6	10	25	0	11	13	3	9	0	0	0	0	103
Store	0	0	0	1	5	0	1	0	1	3	0	0	0	0	11
Kiosk / commercial structure	0	0	1	1	0	1	0	0	0	0	0	0	0	0	3
Pit Latrine	5	23	12	8	25	0	11	11	7	21	0	0	0	0	123
Pit hole	0	8	3	1	6	0	2	3	2	3	0	0	1	0	29
Plate Racks	3	11	3	2	13	1	7	5	1	4	0	0	0	0	50
Ablution Block	0	0	1	2	4	0	1	0	0	7	0	1	0	0	16
Bath Enclosures	2	12	4	3	11	1	5	4	2	2	0	0	0	0	46
AGRICULTURAL STRUCTURES:															
Shed	2	5	1	1	1	0	0	1	1	0	0	0	0	0	12
Shelter / Field Shelters	3	4	0	0	1	1	1	0	0	0	0	0	1	0	11
Tent	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3
Tobacco Barns	10	9	0	0	0	0	0	0	0	0	0	0	0	0	19
Greenhouse	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
LIVESTOCK & ANIMAL STRUCTURES:															
Poultry House	1	9	3	4	9	1	7	3	0	3	0	0	1	0	41
Goat shed / house	3	1	0	0	1	0	5	0	1	1	0	0	0	0	12
Pig sty	0	4	3	0	6	0	2	3	3	5	0	1	0	0	27
Kraals	0	0	0	0	3	0	1	0	1	1	0	0	0	0	6
Pig or Cattle trough	0	1	0	0	3	0	0	0	0	0	0	0	0	0	4
Stall	0	0	1	0	5	1	1	0	1	1	0	0	1	0	11
Cattle dam	0	0	0	0	6	1	19	0	1	1	0	0	1	0	29
Beehives	64	59	16	3	2	0	9	1	3	32	0	0	0	0	189
Fishpond	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
FENCES / GATES:															

Structures:	Hoima	Kikuube	Kakumiro	Kyankwanzi	Mubende	Gomba	Sembabule	Lwengo	Rakai	Kyotera	MCPY1	MCPY2	MCPY3	MCPY4	TOTAL
Fence	0	14	11	2	41	34	50	11	7	6	0	2	1	1	180
Live fence	0	7	4	2	9	12	74	23	2	7	0	0	2	0	142
Trellis	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3
Gate	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3
WATER SOURCE STRUCTURES:															
Borehole	1	1	0	0	0	0	3	0	0	0	0	0	0	0	5
Water dam	0	0	5	2	0	0	0	4	0	3	0	1	0	0	15
Spring well	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Shallow well	0	0	1	0	2	0	0	4	1	0	0	0	0	0	8
CULTURAL STRUCTURES:															
Graves	4	12	12	25	50	0	33	115	82	164	0	0	0	2	499
Shrines:															
- built shrines	0	0	0	0	0	0	0	2	4	1	0	0	1	0	8
- natural shrines (verified) ¹⁶	0	0	2	0	2	0	1	0	2	0	0	0		0	7
TOTAL	115	263	116	85	300	55	278	223	137	292	0	10	12	4	1,890

¹⁶ In addition to the 7 natural shrines which have been verified and valued, there are a further 9 natural shrines which have been identified from engagements with PAPs but not yet verified: 1 in Kikuube District, 1 in Kakumiro District, 6 in Rakai District and 1 in Kyotera District.

Table 6-15 Summary of Affected Structures owned by Institutions

Structures:	Hoima	Kikuube	Kakumiro	Kyankwanzi	Mubende	Gomba	Sembabule	Lwengo	Rakai	Kyotera	MCPY1	MCPY2	MCPY3	MCPY4	TOTAL
Incomplete House	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Pit Latrine	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
Pit hole	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Ablution Block	0	0	0	0	0	0	1	0	0	1	0	1	0	0	3
Bath Enclosures	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Cattle dip	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Beehives	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7
Fence	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4
Live fence	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Chain link fence	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Water dam	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Spring well	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Water tank	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Valley dam	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Classroom block	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
Church house or Mosque	0	2	0	0	1	0	0	0	0	2	0	0	0	0	5
Total	0	3	0	0	8	0	11	1	0	4	0	5	0	2	34

6.6 IMPACTS ON COMMUNAL BUILDINGS

There are 34 structures and buildings owned by institutions, including:

- two classroom blocks in Kitembo A Village, Sembabule District and in Mujunwa Village, Mubende District, MCPY2 (see Figure 6.6 below);
- 2 church house structures in Butyamba village, Kikuube; 1 church house in Nsengwe Village, Mubende; and 2 Mosques in Kituntu Village, Kyotera (see Figure 6.7 below).
- 1 incomplete house;
- 4 bath enclosures and ablution blocks, 4 pit latrines and pit holes;
- 7 beehives and 1 cattle dip;
- 6 fences and live fences; and
- 4 water source structures, such as water dams, boreholes and springs.



Kitembo A Village, Sembabule District.



Mujunwa Village, Mubende District, MCPY2.

Figure 6-6 Two Affected Class Room Blocks in Sembabule and Mubende Districts

Church House 1, Kikuube:



Church House 1, Kikuube:



Church House 2, Kikuube:



Church House, Mubende:



Mosque 1, Kyotera:



Mosque 2, Kytotera :



Figure 6-7 Two Affected Church House Structures in Butyamba village, Kikuube; One Affected Church House in Nsengwe Village, Mubende; and Two Affected Mosques in Kituntu Village, Kyotera

6.7 GRAVES AND CULTURAL HERITAGE ASSETS

There are 499 marked graves identified as affected by Project land requirements. 33% of these are in Kyotera, 23% are in Lwengo and 16% in Rakai District. In addition, during the RAP surveys 168 possible unmarked graves were noted for the Project record. These will be investigated further during implementation and if verified, appropriately compensated for. Verification will involve engagement with family members and local community leaders to confirm the graves prior to PAP Entitlement Briefings (see Section 14.1.4 below). The verification methodology will be agreed with MEMD and relevant ministries, departments and agencies. A verification team will be set up which includes MEMD, EACOP, MGLSD, MTWA, Cultural institutions, Local Governments and PAPs.

Fifteen verified shrines will also be affected, which have been recorded, verified and valued, comprising:

- Eight (8) built shrines: 2 in Lwengo District, 1 in Kyotera District, 4 in Rakai District and 1 in MCPY-03, Sembabule District;
- Seven (7) verified natural shrines: 2 in Kakumiro District, 2 in Mubende District, 1 in Sembabule District and 2 in Rakai District.

In addition, there are a further 9 natural shrines which were identified from engagements with PAPs but have not yet been verified or valued: 1 in Kikuube District, 1 in Kakumiro District, 6 in Rakai District and 1 in Kyotera District.

Built Shrine, Rakai District:



Cemented grave, Rakai:



Earth grave, Rakai:



Figure 6-8 Examples of Graves and Shrines

6.8 IMPACTS ON CROPS AND ECONOMIC TREES

As noted above, agriculture is the primary source of livelihood throughout Project affected land areas. Table 6-16 shows that 3,466 PAPs will be affected by loss of crops or economic trees, which represents 91% of total PAPs. Commonly affected crops include maize, cassava, sugar cane, yams and sweet potato – PAPs will be given the opportunity to harvest these crops prior to Project land access for the construction phase. A total of 2,062 PAPs are affected by loss of trees, including fruit trees, such as mango, avocado, passion fruit, paw, guava and jack fruit; and timber trees, such as acacia, teak, eucalyptus, bark cloth and bamboo.

The distribution of the number of PAPs affected by loss of crops and trees generally reflects the number of PAPs by District and Priority Area.

As shown in Table 6-17, 291 PAPs were recorded during the surveys as having only include seasonal crops so were not subject to valuation. As noted above, PAPs will be given the opportunity to harvest the crops prior to Project land access for the construction phase. These 291 PAPs are in addition to the 3,466 PAPs affected by loss of perennial crops and economic trees, with some also growing seasonal crops.

Table 6-16 Number of PAPs affected by Loss of Trees Crops & Trees, and number of times Crops & Trees appear in Valuations (incl. multiple valuations for individual PAPs)

	Hoima	Kikuube	Kakumiro	Kyankwa nzi	Mubende	Gomba	Sembabu le	Lwengo	Rakai	Kyotera	MCPY1	MCPY2	MCPY3	MCPY4	TOTAL
PAPs with loss of crops and/or economic trees	78	359	364	209	642	35	407	500	304	439	37	16	45	31	3,466
PAPs with loss of Crops	71	326	336	208	573	20	336	444	264	401	31	15	42	25	3,092
PAPs with loss of Economic Trees	57	259	205	157	346	28	222	255	195	257	22	4	30	25	2,062
Impacted Crops¹ & Trees:															
CROPS:															
Cassava	46	224	208	146	401	6	284	379	197	325	13	4	36	9	2,278
Bananas	31	146	151	124	315	6	234	287	172	280	11	2	37	2	1,798
Maize (seasonal crop)	1	1	177	196	95	13	243	313	150	238	27	12	40	11	1,517
Coffee	11	55	56	72	179	-	237	321	182	303	3	-	30	5	1,454
Yams	22	70	22	49	108	-	70	117	80	96	8	-	5	-	647
Beans (seasonal crop)	-	-	5	29	6	1	55	129	118	185	-	1	1	2	532
Sugarcane	10	63	40	35	44	-	38	57	54	98	3	1	3	-	446
Sweet potatoes (seasonal crop)	3	-	60	72	18	3	57	77	25	59	6	2	12	2	396
Groundnuts (seasonal crop)	-	-	28	7	11	3	51	81	32	40	2	2	10	2	269
Pumpkin	6	37	16	7	63	3	19	34	10	30	-	4	1	-	230
Irish potatoes (seasonal crop)	2	-	2	32	13	-	10	17	30	66	-	-	-	2	174
Entula / Garden Eggs	2	27	21	-	39	-	-	34	-	-	-	-	2	-	125
Egg Plant	7	14	5	5	-	-	13	17	-	48	-	-	-	-	109
Peas (seasonal crop)	3	71	6	2	3	-	3	-	1	10	2	-	-	-	101
Vegetables (seasonal crop)	2	8	-	1	-	-	1	3	27	31	1	1	2	-	77
Sisal	-	4	3	1	4	3	23	21	2	5	-	-	4	1	71
Sorghum (seasonal crop)	11	-	25	6	1	3	8	4	2	11	-	-	-	-	71
Elephant Grass	-	2	3	17	-	-	8	14	17	-	3	-	1	1	66
Millet (seasonal crop)	2	2	14	-	4	1	15	6	1	1	-	-	-	2	48
Tomatoes (seasonal crop)	1	-	-	2	2	-	8	13	15	-	-	1	1	1	44
Rice (seasonal crop)	-	-	34	3	-	-	-	-	-	-	-	-	-	-	37
Tobacco	-	1	3	-	3	-	4	11	1	12	-	-	1	1	37
SUB-TOTAL	160	725	879	806	1,309	42	1,381	1,935	1,116	1,838	79	30	186	41	10,527

	Hoima	Kikuube	Kakumiro	Kyankwa nzi	Mubende	Gomba	Sembabu le	Lwengo	Rakai	Kyotera	MCPY1	MCPY2	MCPY3	MCPY4	TOTAL
TREES:															
Mango	17	132	77	33	129	1	89	139	91	158	9	2	15	9	901
Jackfruit	13	112	70	41	140	1	108	149	87	125	7	1	16	5	875
Bush Tree	56	219	266	36	31	26	111	46	20	-	3	3	5	8	830
Musambya	4	63	115	105	205	1	59	46	33	31	16	1	18	2	699
Avocado	10	64	47	30	136	1	77	101	49	104	2	-	4	2	627
Eucalyptus	24	81	31	26	75	1	33	81	104	67	1	1	2	14	541
Bark cloth/mutooma	1	-	34	32	91	6	-	118	103	152	-	3	-	-	540
Pawpaw	19	54	45	17	66	4	53	50	28	49	1	-	8	-	394
Guava	4	52	14	7	52	-	37	43	85	79	-	1	6	6	386
Mugavu	-	-	28	36	85	21	65	19	8	7	1	1	1	-	272
Acacia	7	40	49	20	11	-	51	-	17	13	5	-	5	2	220
Palm	3	54	41	38	37	-	-	-	12	8	13	3	-	2	211
Live hedge	-	2	-	1	40	13	97	32	-	-	-	-	5	-	190
Oranges	2	13	5	7	21	3	26	23	21	60	1	1	3	3	189
Pineapple	7	29	33	11	24	-	7	13	14	43	-	-	-	2	183
Nongo	5	21	40	41	32	1	-	-	-	-	6	2	-	-	148
Musisa	7	38	20	-	-	-	5	10	18	31	2	3	-	2	136
Passion fruit	1	27	4	4	10	1	6	21	22	18	-	1	3	1	119
Pine	2	14	3	5	7	-	2	2	5	3	2	-	1	1	47
Kirundu	-	9	12	7	14	-	-	-	-	-	1	1	-	-	44
Jambula	-	1	4	2	1	-	2	4	6	23	-	-	-	-	43
Mahogany	4	26	-	-	1	-	-	-	-	-	-	-	1	-	32
Mvule	9	14	-	-	3	-	1	2	-	-	-	-	-	-	29
Lemon	-	4	4	2	-	-	-	6	5	7	-	-	-	-	28
Tangerine	-	6	-	-	1	-	-	-	4	8	-	-	-	-	19
Cocoa	1	6	4	-	-	-	-	-	-	-	-	-	-	-	11
Gum Tree	1	6	1	1	-	-	-	-	-	-	-	-	-	-	9
Teak	-	-	-	1	-	-	-	-	-	-	-	-	-	1	2
Bamboo	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
SUB-TOTAL	197	1,087	947	504	1,212	80	829	905	732	986	70	24	93	60	7,726

	Hoima	Kikuube	Kakumiro	Kyankwa nzi	Mubende	Gomba	Sembabu le	Lwengo	Rakai	Kyotera	MCPY1	MCPY2	MCPY3	MCPY4	TOTAL
MEDICINAL HERBS & TREES:															
Herbs/Medicinal Plants / Trees²	31	188	4	59	16	-	13	24	56	-	4	-	1	2	398
Jirikiti	-	1	-	30	44	-	-	-	-	-	-	-	-	-	75
Aloe Vera	6	14	2	2	3	-	-	1	-	-	-	1	2	-	31
SUB-TOTAL	37	203	6	91	63	-	13	25	56	-	4	1	3	2	504
OTHER CROPS & TREES:	27	86	73	105	466	11	157	129	134	22	48	17	60	18	1,353
GRAND TOTAL	421	2,101	1,905	1,506	3,050	133	2,380	2,994	2,038	2,846	201	72	342	121	20,110
% of grand total by District & PA	2%	10%	9%	7%	15%	1%	12%	15%	10%	14%	1%	0%	2%	1%	100%
% of PAPs by District & PA	2%	10%	9%	6%	18%	1%	12%	14%	10%	14%	1%	0%	1%	1%	100%

Note 1: Seasonal crops. Seasonal crops were not assessed for compensation as PAPs will be given ample time to harvest them during the planned 3 months' minimum notice to vacate period.

Note 2: Medicinal plants and herbs were assessed for compensation using district compensation rates.

Table 6-17 PAPs Recorded during Surveys with Seasonal Crops Only¹⁷

	Hoima	Kikuube	Kakumiro	Kyank-wanzi	Mubende	Gomba	Sembabule	Lwengo	Rakai	Kyotera	MCPY1	MCPY2	MCPY3	MCPY4	TOTAL
No. of PAPs with seasonal crops only, not included in valuations	1	0	63	11	113	4	19	53	14	12	0	0	0	1	291
1 Beans			1		5		6	15	2	8					37
2 Groundnuts			4		3		3	7	1						18
3 Irish potatoes					7			1	6						14
4 Maize			50	10	86	4	17	34	4	9					214
5 Millet			5		3		1								9
6 Rice			15												15
7 Sorghum	1		4		1		1								7
8 Sweet potatoes			9	1	10		1	9	0	2					32
9 Vegetables										1					1
10 Soya beans			1		2			1	1						5
11 Simsim			1												1
12 Tomatoes				1				2						1	4
13 Cabbages								2							2
14 Onions								2							2

¹⁷ The inventory of seasonal crops was undertaken in the Districts for about 75% of the surveys, with the surveys of the MCPYs 100% PAPs with seasonal crops being captured. PAPs who lose seasonal crops will be given the opportunity to harvest these. The Project will monitor impacts on PAPs who only lose seasonal crops during RAP implementation, serving of notices and may record additional PAPs with only seasonal crops. On a case-by-case basis some of these PAPs may be offered access to the relevant livelihoods programmes depending on significance of losses.

6.9 IMPACTS ON LIVELIHOOD ACTIVITIES – ECONOMIC DISPLACEMENT

As described in Chapter 5, since the majority of the pipeline route (92%) runs through rural areas, the livelihoods of most PAPs are land based, with households growing crops and economic trees for their own subsistence consumption and some income generation.

Most PAPs will experience some level of economic displacement in the form of impacts on crops and trees, with a total of 3,466 PAPs (91% of PAPs) having been recorded as owning crops and/or economic trees on Project affected land.

However, this impact is expected to be minor since the linear nature of the pipeline project means that only a small portion of most affected land areas will be impacted, with 70% of affected land areas losing less than 30% of their area, and only 15% of affected land areas losing 50% or more. Combined with the planned compensation and livelihood restoration measures described in Chapter 7 and Chapter 9, PAPs will therefore be able to continue their land based livelihoods.

Grazing activities, which are particularly important to livelihoods in Sembabule and Gomba, will not be significantly impacted due to the small areas of Project affected land relative to large areas of grazing land in the vicinity. The construction process will be designed to minimise impacts on livestock movements, and once in operation, the pipeline corridor will not be fenced so livestock movements will not be restricted.

Other non-land based livelihood activities are not expected to be significantly impacted. Only 5 mixed use commercial / residential structures and 3 kiosks / commercial structures are impacted, and with the planned compensation and entitlements, PAPs will be able to continue livelihood activities run from these premises.

Further details on the livelihoods and socio-economic setting of PAPs are provided Chapter 5, and details of the livelihood restoration measures provided in Chapter 9.

Table 6-18 No. of PAPs and Valuations for Grazing Land

District / Priority Area:	No. of Valuations	No. of PAPs
Hoima	-	-
Kikuube	34	29
Kakumiro	-	-
Kyankwanzi	1	1
Mubende	56	42
Gomba	21	14
Sembabule	117	83
Lwengo	18	16
Rakai	23	19
Kyotera	34	26
MCPY1	-	-
MCPY2	-	-
MCPY3	2	2
MCPY4	5	3
TOTAL	311	235

6.10 IMPACTS ON PUBLIC UTILITIES/INFRASTRUCTURE

The pipeline corridor will cross a number of public utilities and infrastructure corridors.

The Project will establish crossing agreements of the pipeline corridor across existing public utilities/infrastructure facilities with the relevant Government Agencies/Authorities responsible for the utilities. Any diversion of utilities/services and infrastructure will be in conformity with national standards and works will be agreed by the Project and relevant authority (including responsibility for works).

Table 6-19 below summarizes the powerline and road crossings recorded during the land acquisition surveys, additional crossings, a railway line, water supply and sewerage systems are also traversed by the corridor.

Table 6-19 Affected Powerlines and Road Crossings

Districts	Distribution lines (UMEME and REA)	Transmission line (high voltage), UETCL	National Roads	District Roads	Community Access roads
Hoima			0	1	4
Kikuube			2	5	18
Kakumiro (PPL and MCPY1)	1		2	7	15
Kyankwanzi			1	4	6
Mubende (PPL & MCPY2)			3	6	57
Gomba		1	1	1	6
Sembabule (Helipad, PS2, PPL & MCPY3 Access Roads)	7		2	7	41
Lwengo	2	1	2	5	35
Rakai	1	0	1	4	36
Kyotera (PPL & MCPY4, Access Road)	5	2	1	5	16
Total	16	4	15	45	234

A number of the national and district roads are crossed twice by the pipeline corridor. Further ground verification and engagement with the relevant authorities by the Project's technical team on crossings will be undertaken.

One railway line under the jurisdiction of Uganda Railway Corporation is crossed in the village of Kalyamawolu in Gomba district, this has been non-functional for a long time and runs from Kampala to Kasese.

6.11 IMPACTS ON FORESTS & WOODLOTS

The Ugandan section of the EACOP traverses the following types of forested areas comprising Forest Reserves (under the jurisdiction of NFA) and private forested land (i.e. plantations,

woodlots, woodlands and agroforests etc.) (see Figure 6-9) including:

- Central Forest Reserve (CFR) (Taala) in Kyankwanzi District:
 - The pipeline corridor crosses Taala CFR for 4.08 km. The pipeline also crosses an additional 0.409 km of Taala CFR which is covered by wetland/riverbank. So the total distance including the portion in the wetland/riverbank is 4.489 km.
 - Of the 4.489 km of Taala CFR traversed the NFA only directly manage 2.34 km (which includes the 0.409 km in the wetland/riverbank). The other 2.149 km portion of Taala CFR is under license from NFA to private tree farmers.
- The pipeline corridor will also traverse two big private commercial plantation forests in Mubende District, as well as some other private forested land (i.e. woodlots, woodlands and agroforests). These resources are owned by private individuals or companies and are treated as PAPs within the RAP with their affected trees and other assets valued within the Valuation Reports.

As noted in Chapter 4, NFA were hired by the RAP Contractor to advise on the valuation of forests and woodlots affected by the pipeline corridor. Within the forested areas and woodlots along the route the NFA inventory identified 147,318 tree stems and samplings, belonging to 510 indigenous and artificial species. The trees and forest resources which are privately owned are valued within the Valuation Reports. The affected trees and forest resources under the management of NFA are presented in this RAP and the NFA report. These are not valued within the Valuation Reports.

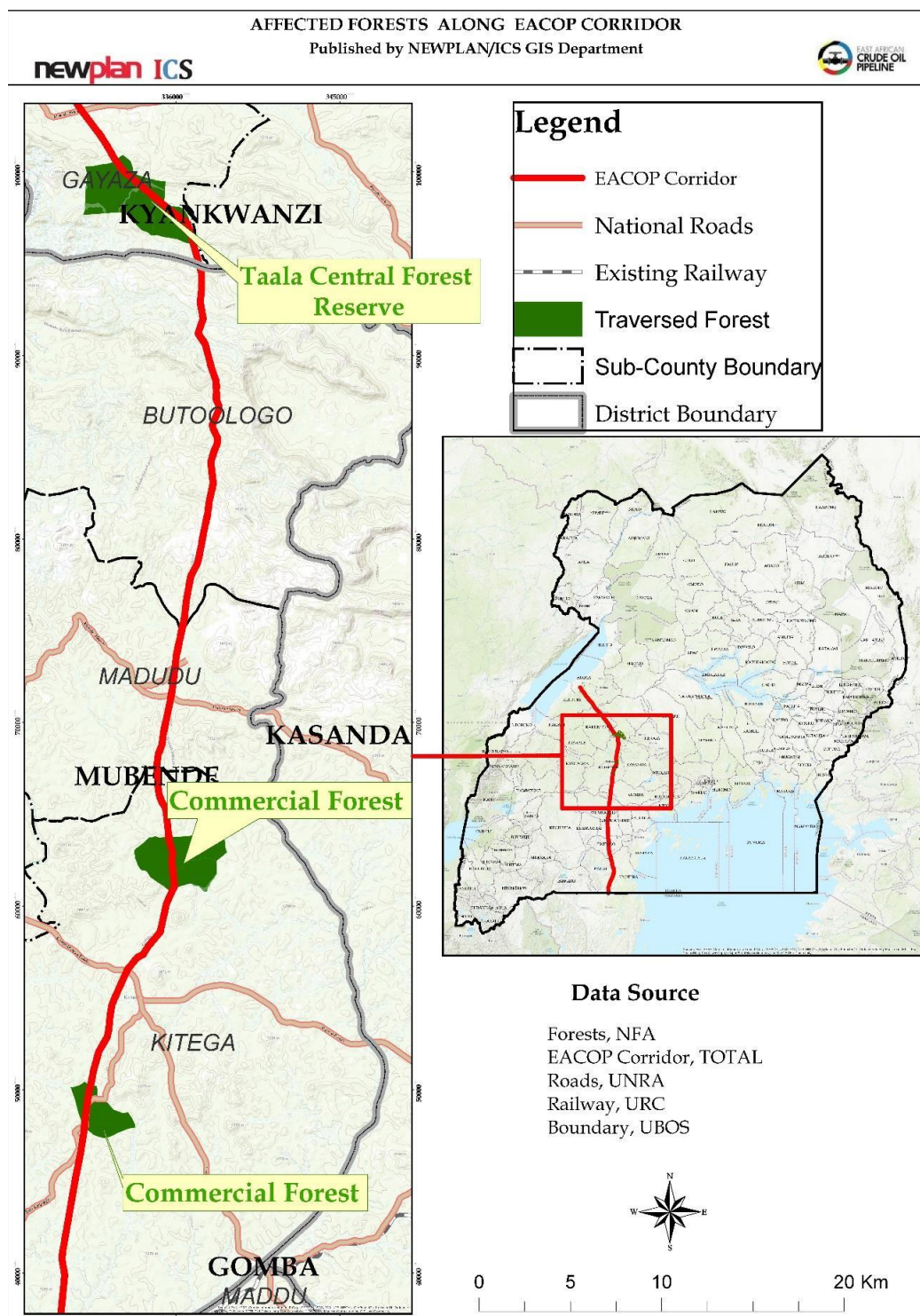


Figure 6-9 Taala CFR in Kyankwanzi District and Two Large Private Plantations in Mubende District¹⁸

¹⁸ Assessment of Forests, Woodlots, woodlands and Agroforestry Lands along the EACOP; NFA (Dec'2019)

6.11.1 Taala CFR

The Taala CFR is located in Kyankwanzi District. The area affected in the Taala CFR by the pipeline corridor of 36 acres (approximately 14.4 hectares) is heavily degraded (see Figure 6-10) with the majority of the indigenous species cut down.

The main affected forest portions are planted with eucalyptus and pine trees and other planted species which belong to three (03) NFA licensed tree farmers. Some portions (approximately 2.1 hectares) of the forest within the pipeline corridor are covered with a natural belt comprising wetland forest (see Figure 6-11).

Structures and crops attributed to the 50 PAPs were recorded during the valuation within the pipeline affected CFR that is managed by NFA and is not licensed out to the three (3) private tree farmers. Seven (7) of these 50 PAPs having dwellings within the affected portion of the CFR. The affected structures and crops of these 50 PAPs have been valued in the Valuation Reports.



Figure 6-10 Degraded Portion of Taala CFR



Figure 6-11 Natural Belt (Wetland Forest) of Taala VFR

The results of the forest inventory carried out in Taala CFR are summarized in the table below.

Table 6-20 Summary of Forest Inventory in Taala CFR Area Affected by Pipeline Corridor

	No. of Tree Species	No. of Tree Stems	No. of Stumps	No. of Saplings	No. of Seedlings	Total Volume m ³
NFA Managed Natural Forest resource (see Table 7-3 for valuation)	21	315	0	0	0	90.5
Privately Owned Trees/Forest Resources (Valued in Valuation Reports)	12	2035	34	0	1857	327.5
Total	33	2350	34	0	1857	418

(Source: NFA (Dec 2019))

The valuation assessment of the forest inventory for the loss of natural forest resource in the NFA managed areas of the Project-affected areas of Taala CFR is summarized in Section 7.3.9. These are not valued in the Valuation Reports. The valuation of privately owned trees and other assets are valued within the Valuation Reports.

6.11.2 Other Forested Sites, Woodlots etc.

The results of the forest inventory carried out by NFA of the other assessed forested sites are

summarized per district in the table below. The information from NFA's inventory was used to inform the valuation of these trees and forestry assets which are valued within the Valuation reports with the PAPs being included within the figures presented above in Table 6-1 and Table 6-16.

Table 6-21 Summary of Forest Inventory for Other Forested Sites (excluding Taala CFR) Affected by Pipeline Corridor

	No. of Tree Species	No. of Tree Stems	No. of Stumps	No. of Saplings	Total Volume m ³
Hoima	50	1161	11	355	57.05
Kikuube	43	4830	24	1098	707.19
Kakumiro	50	2679	32	444	336.91
Kyankwanzi	32	2353	34	34	418
Mubende	117	11537	155	3052	2264.56
Gomba	30	2246	0	0	273.64
Sembabule	66	13448	137	1877	840.52
Lwengo	42	9870	3000	16730	620.14
Rakai	45	9609	1453	25848	662.29
Kyotera	35	10980	422	27138	590.45
Total	510	68713	5268	76256	6770.75

(NFA (December 2019))

6.12 IMPACTS ON WETLANDS & RIVERBANKS

The pipeline traverses a number of wetlands, rivers and their banks. The pipeline covers approximately 437 acres in demarcated wetlands and riverbank areas. There are an estimated 589 PAPs who were recorded during the surveys as having some interest or affected assets in these areas. Many of these PAPs have land interests which run into or up to the demarcated wetland and riverbank areas. Some PAPs are undertaking livelihood activities in these areas but do not hold a recognizable legal right, interest or claim to the land; Section 7.3.8 presents the valuation approach to affected land and assets in these areas. Eligibility for compensation of wetland PAPs is dependent on a number of factors including: whether the land title was created before 1995; whether the area has been gazetted by Government; and whether the PAP has a prerequisite permit. Along the EACOP route, two rivers, the River Kafu and River Katonga, are gazetted as per the Laws of Uganda. There are 6 PAPs in these gazetted areas, and in line with IFC PS5 requirements, developments, structures and crops in these areas will be compensated.

The table below presents a summary of the wetland and rivers crossed by the pipeline and the land area covered:

Table 6-22 Summary of Wetland & Riverbank Crossings

District	No. of Wetlands	No. of Permanent Wetlands	No. of Seasonal Wetlands	No. of Rivers	No. of Permanent Rivers	No. of Seasonal Rivers	Project Affected Area (acres)	No. of PAPs Recorded with Land/Assets in Affected Area	No. of PAPs with Titled Land Interests (Land within or adjoining area)	No. of PAPs with Customary Tenure (Land within or adjoining area)	No. of Large Rivers with Buffer Zone >100m
Hoima	1	0	1	1	0	1	2.4	7	0	7	0
Kikuube	18	5	13	3	2	1	50.3	69	11	58	1
Kakumiro	13	2	11	11	1	0	40.6	33	5	28	0
Kyankwanzi	8	2	6	0	0	0	22.7	25	25	0	0
Mubende	21	4	17	0	0	0	45.7	47	47	0	0
Gomba	3	0	3	2	2	00	23.7	11	1	10	1
Sembabule	31	1	30	1	1	0	100.3	110	27	83	0
Lwengo	21	1	20	1	1	0	43.7	91	26	65	0
Rakai	11	3	8	7	7	0	41.8	124	14	110	0
Kyotera	6	1	5	2	2	0	65.6	72	7	65	0
Total	133	19	114	18	16	2	437	589	163	426	2

6.13 POTENTIALLY VULNERABLE PERSONS AND HOUSEHOLDS

The number of vulnerable and potentially vulnerable households based on pre-existing vulnerability factors affected by the Project land acquisition program is indicated in Table 6-23. Additional to these the Project has identified PAPs who from the Project land acquisition program have ≤ 0.5 acres of land remaining or $\geq 80\%$ of their land parcel is affected will be identified as potentially vulnerable due to the risk of Project induced impacts resulting in them being disproportionately impacted. Further information on vulnerability criteria is provided in Section 7.4.6.

Table 6-23 Number of Potentially Vulnerable Households

District/MCPY	Category 1 PAHs Vulnerable	Category 2 PAHs Potentially Vulnerable	Total Cat. 1 and Cat. 2 PAHs (Vulnerable / Potentially Vulnerable)
Hoima	20	6	26
Kikuube	58	30	88
Kakumiro	49	31	80
Kyankwanzi	28	12	40
Mubende	129	41	170
Gomba	8	1	9
Sembabule	69	28	97
Lwengo	103	26	129
Rakai	59	24	83
Kyotera	91	50	141
Sub-Total	614	249	863
Priority Areas (including Access Roads)			
MCPY-01	16	2	18
MCPY-02	5	1	6
MCPY-03	15	2	17
MCPY-04	13	2	15
Sub-Total	49	7	56
TOTAL	663	256	919