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THE REPUBLIC OF UGANDA

THE NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)
The National Environment Act Cap. 153
The Environmental Impact Assessment Regulations, S.I. No. 13 of 1998

Certificate of Approval of Environmental Impact Assessment

Certificate No. NEMA/EIA/ 10475

*This is to certify that the Project Brief/Environmental Impact Statement***

received from

M/s. MINISTRY OF AGRICULTURE, ANIMAL INDUSTRY & FISHERIES, & MINISTRY OF WATER AND ENVIRONMENT
of P.O. BOX 102 ENTEBBE, TEL: +256 414 320004

submitted in accordance with the National Environment Statute to the National Environment Management Authority (NEMA) regarding:

ESIA FOR ATARI RIVER BASIN IRRIGATION SCHEME

(Title of Project)

briefly described as ATARI RIVER BASIN IRRIGATION SCHEME

(Nature, Purpose)

located at BUNAMBUTYE SUBCOUNTY, BULAMBULI DISTRICT AND NGENGE SUBCOUNTY, KWEEN DISTRICT

(District/Sub-county/City/Town/Ward)

has been reviewed and was found to:

- ~~** have no significant environmental impacts and was approved~~
- ** have significant environmental impacts and the following appropriate mitigation measures were identified and made a condition precedent for approval and implementation:

= PLEASE TURN OVER =

(Attach relevant details when applicable)

Dated at KAMPALA 2ND AUGUST, 2017

XX

Executive Director (NEMA)

ORIGINAL: Developer; DUPLICATE: Lead Authority; QUADRUPPLICATE: Any other relevant agency

** Delete whichever is not applicable

CONDITIONS OF APPROVAL
(Additional Information Sheet)

CONDITIONS OF APPROVAL FOR THE ESIA FOR ATARI RIVER BASIN

IRRIGATION SCHEME

In addition to implementing the mitigation measures outlined in the Environmental and Social Impact Assessment, this Certificate of Approval is granted on condition that the Developers,

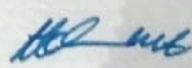
MINISTRY OF AGRICULTURE, ANIMAL INDUSTRY AND FISHERIES; AND, MINISTRY OF WATER AND ENVIRONMENT, shall comply with the approval conditions stated below:

ADMINISTRATIVE CONDITIONS OF CERTIFICATE

1. This Certificate is issued in accordance with the requirements of the National Environment (Environment Impact Assessment) Regulations, SI. No. 153-1 and of the Physical Planning Act, 2010.
2. Issuance of this Certificate of Approval is based on the content of information contained in the Environmental and Social Impact Assessment as submitted by the Developer.
3. The Developer shall be held responsible for any omissions, falsified information or any other anomalies that are contrary to the provisions stipulated in the relevant laws governing the proposed project.
4. This Certificate of Approval is **VALID** for a period of **20 YEARS** - the period that covers both the construction and operational phases of the project.
5. The project must commence within the first **24 months** (from

Dated at KAMPALA on 2ND AUGUST, 2017 2x

Signed



Executive Director (NEMA)



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

CONDITIONS OF APPROVAL FOR THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT PERTAINING TO ATARI RIVER BASIN IRRIGATION SCHEME, IN BUNAMBUTYE SUB-COUNTY, BULAMBULI DISTRICT AND NGENGE SUB-COUNTY, KWEEN DISTRICT (GPS COORDINATES: Latitude 1° 43' North and 1° 30' South and Longitude 34° 27' East and 34° 27' East)

ADMINISTRATIVE CONDITIONS OF CERTIFICATE (Cont..d)

...the date of approval) of the validity period, failure of which the Certificate may be varied, cancelled or otherwise dealt with by this Authority.

6. The Executive Director should be **NOTIFIED** of any transfer of ownership, variation/alteration of the project design or components, or surrender of this Certificate of Approval.

1.0 SPECIFIC CONDITIONS OF APPROVAL

- (i) Restrict project activities to the area shown in Figure 1, and ensure that project affected persons are compensated and/or resettled based upon mechanisms defined in a Resettlement Action Plan (RAP), which should be developed and approved by the relevant Lead Agency.
- (ii) Implement the project activities in conformity with the planning provisions for the area as provided for by the local government authorities of Bulambuli and Kween districts, and in accordance with the requirements under the Physical Planning Act, 2010, and other relevant laws.
- (iii) Ensure members of the community are represented at an appropriate level of project implementation, and that representation is balanced across gender, age and tribe.
- (iv) Put in place mechanisms – chance finds and avoidance procedures – to guide the management of tombs and human remains whenever they are found.
- (v) Ensure that the project benefits the community members, and where they are eligible, they should be employed to provide casual labour.
- (vi) Where water sources, such as springs and boreholes, are affected by the project, ensure you replace them as necessary. In addition, designate and install drinking water points and cattle paths for cattle keepers and their cattle, since the project area includes



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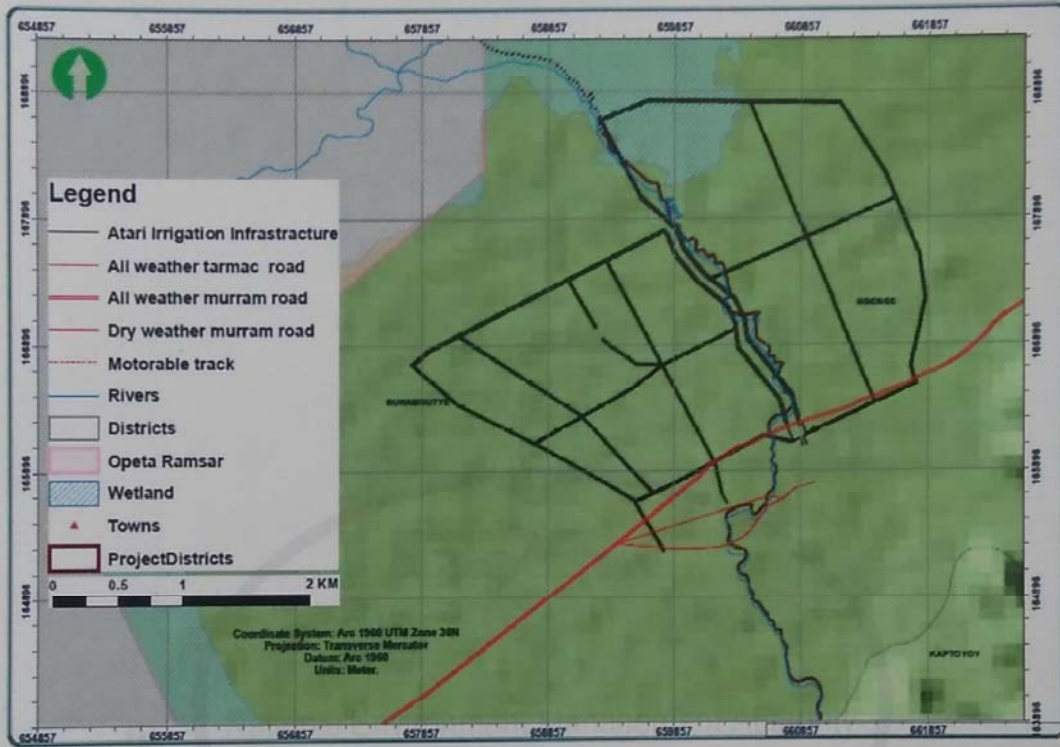


Figure 1. Location of the project at the Bulambuli-Kween border

original water points and cattle paths, and plan for the establishment of alternative grazing or fodder areas to sustain the livestock industry in the area.

- (vii) Seek guidance and approval from the Directorate of Water Resources Management to tap and divert water from River Atari, and ensure that the environmental flows of Atari River, both upstream and downstream, are observed and complied with as prescribed by the Directorate of Water Resources Management (DWRM), in accordance with the Water (Water Resources Regulations) S.I No. 152-1, in order to sustain the hydrological functions of the River.
- (viii) Ensure that works on the river, such as, flow intake, dykes, working platforms, sedimentation basin, screens at intake and fishways, which are intended to divert water to irrigation plots, avoid flooding, mitigate bank erosion and sediment input, guard against sediment transfer along the course of the river, avoid diversion of macro-aquatic



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fauna into irrigation canals, and avoid disrupting fish, respectively, are approved by NEMA.

- (ix) Obtain approvals of the structural and site layout plans, and alignments of the irrigation components/infrastructure from the relevant Lead Agencies, including the DWRM, Bulambuli and Kween Districts Local Government Authorities, and Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). In doing so, ensure dykes **are placed 30 meters on either side of the course**, and that the design is the most appropriate to mitigate floods and limit encroachment of the floodplain and ecologically sensitive areas, but that it also takes into account the requirement for a proportionate amount of land for cultivation. Further, ensure you put in place mechanisms to protect the buffer along the river course, since this is a refugia for a host of fauna.
- (x) Seek approval from NEMA to use wetlands in the area, and ensure the project excludes ecologically sensitive areas, which were mapped during the Environmental and Social Impact Assessment study. Share the site map showing these areas with NEMA and Uganda Wildlife Authority, and monitor them for coverage and habitat quality.
- (xi) Conduct periodic water and soil quality tests of soil and water in the irrigation scheme area and of waters of Atari River, in order to minimize deterioration of soil and water quality in the project area and its environs, in accordance with the Water (Water Resources Regulations) S.I. No. 152-1 and other relevant laws and standards, and as shall be prescribed by the DWRM, among others.
- (xii) Obtain the necessary guidance and approval from MAAIF regarding the range of **agro-chemicals (artificial fertilisers, pesticides, among others) that are permitted for use** in crop farming activities, especially those applicable to irrigation schemes, but also institute a programme that will ensure the conduct of good farming practices, non-reliant on agro-chemicals and also less dependent on fertilizers.
- (xiii) In accordance with the National Environment (Waste Management) Regulations, 153-2, collect, sort and contain all solid waste (*e.g. construction debris, muck, excavated soil, metal scrap*) and garbage in a proper manner, and dispose of the waste in locations gazetted as waste dump-sites by the Local Authorities.
- (xiv) Contract only hazardous waste handlers licensed by the National Environment Management Authority (NEMA), to collect and dispose of hazardous waste including waste-oil, used plastics/polythene materials, contaminated materials, in line with the National Environment (Waste Management) Regulations, S.I 153-2.



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- (xv) Carry out annual environmental audits in accordance with the best available practices (taking into account advances in science and technology) as stipulated in Section 6 of the National Environment (Audits) Regulations, 2006; and submit the first environmental audit report by **August, 2018**.
- (xvi) Carryout separate Environmental and Social Impact Assessments for any planned components (such as, **processing facilities**) of the project that are not subject of this approval, in line with the Environmental Impact Assessment (EIA) Regulations, S.I.153-1.
- (xvii) In accordance with Section 22(4) of the National Environment Act (NEA), Cap. 153, take all reasonable measures and mitigate any other undesirable environmental impacts that may arise during the implementation of the project, but were not contemplated during the initial environment impact assessment and by the time of issuing this Certificate of Approval, and report on those measures to the relevant Lead Agencies and this Authority.

2.0 GENERAL CONDITIONS OF APPROVAL

- (xviii) Liaise with the Bulambuli and Kween Districts Local Government authorities to sensitize the concerned local communities about the Project and its associated impacts; and, put in place a grievance committee to address any issues that may arise during the project implementation phases.
- (xix) Ensure that matters pertaining to shared resources and services utilized by the local communities (*including access to public utilities and services, access road, water sources*) are handled in a proper manner, in liaison with the Local Authorities in order to minimize social conflict.
- (xx) Put in place adequate Occupational Health and Safety (OHS) measures and procedures to cater for workers during the implementation of the project, including training, first aid and barricades with warning tapes; and ensure that workers are adequately protected from exposure to excessive dust, noise, agrochemicals, or any other occupational hazards, as stipulated in the Occupational Safety and Health Act, 2007.
- (xxi) Institute a STD and HIV/AIDS awareness and prevention programme to sensitize project-related staff/workers, the community residing and/or working around the project, among others, on issues relevant public health issues related to the afore-mentioned subject.



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- (xxii) Control the levels of noise during construction and project implementation phases of the Project, and maintain the noise levels within limits stipulated in the National Environment (Noise Standards and Control) Regulations, S.I No. 30/2003.
- (xxiii) Put in place an appropriate and comprehensive **disaster-preparedness and emergency response plans**, to cater for both the construction and operational phases of the Project.
- (xxiv) Display copies of this Certificate of Approval in strategic locations at the project offices, and should be available at all times.
- (xxv) Fulfill any other conditions and requirements as may be prescribed from time to time by the Bulambuli and Kween Districts Local Government Authorities, NEMA, MAAIF, DWRM, and other relevant Lead Agencies.
- (xxvi) Implement the environmental and social management and monitoring plan as outlined in the Environmental and Social Impact Assessment report; and ensure record keeping as required under Section 77 of the National Environment Act, Cap. 153, and their transmission to this Authority as required under Section 78 of the Act.

3.0 CONSTRUCTION PHASE CONDITIONS OF APPROVAL

- (xxvii) Undertake construction activities during **day-time hours (7.00am to 6.00pm)**.
- (xxviii) Ensure community members continue to use the land during construction, and that where this is not possible, consider them as project affected persons and compensate them as guided by the RAP.
- (xxix) Construct canals using materials that protect against channel erosion, and during operation, stabilize canals to avoid seepage, hence waterlogging of fields, and locate canals and dykes where they do not obstruct natural drainage.
- (xxx) Conduct most of the construction activities during the dry season in order to minimize road damage, and seek the necessary approvals from the Uganda National Roads Authority (UNRA) to connect access roads to the main roads in the area.
- (xxxi) Use specially designed trucks to transport project-related materials and different kinds of waste, in order to prevent littering, spillage and leakage of such materials/substances; and the trucks should bear phrases that convey a message

[Handwritten signature]



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to the general public that the items being transported, can pose a risk to the safety of people, among others.

- (xxxii) Ensure hydrocarbons are not stored in and around fragile spots of the project area, and that servicing and maintenance of project equipment, including vehicles, is done at places designated by Bulambuli and Kween District Local Governments.
- (xxxiii) Liaise with the Uganda Traffic Police Authorities to install appropriate road signage (*that can also be illuminated during night hours*) along sections of the access road leading to the project sites, to draw attention of the drivers and other road users to danger points and ongoing activities, and where necessary, use flagmen to guide flow in and around high activity spots in the project area.
- (xxxiv) In accordance with the Road Act, Cap. 358, impose speed limits on truck drivers transporting project-related materials and equipment/machinery to and from the project sites, in order to minimize occurrence of accidents.

4.0 OPERATIONAL PHASE CONDITIONS OF APPROVAL

- (xxiv) Ensure farmers are trained on the use and operation of the irrigation system in order to avoid over-irrigation of field.
- (xxv) Put in place procedures for monitoring, control, inspections, and maintenance of the project components, and to enable detection of and timely remedial action in case of malfunctioning or departure from the anticipated functionality of the project components.
- (xxvi) Document and archive all critical data regarding the project area and activities, aspects of water and soil quality, and the hydrology of the micro-catchment of which the Project is a part, and ensure this data is made readily available to relevant Lead Agencies from time to time.
- (xxvii) Adopt practices that reduce anoxia and hence methane generation, such as periodically draining paddies and use of compounds that increase activity of microbes other than methanogens, among other, and encourage organic farming so as to reduce the use of agrochemicals that contribute greenhouse gases (GHGs).
- (xxviii) Plant indigenous trees and grasses across disturbed areas that will not be used for agriculture, as these will offer refuge to tree- and grass-birds, which will be affected when their niches are replaced by farmland.



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- (xxix) Encourage establishment of woodlots in upland locations around the project area, to supply energy to the community, since the project will take up part of the land that has historically provided wood fuel in the form of reeds and shrubs.
- (xxx) Put in place measures and programmes to manage water-borne diseases, characteristic of highly saturated areas, and ensure to undertake periodic water-borne diseases awareness campaigns in the project area.
- (xxxi) Seek permission from NEMA and other relevant Lead Agencies whenever repellents are to be used to repulse bird pests of rice fields.
- (xxxii) Ensure to maintain proper and up-to-date records of the agro-chemicals used, mindful that such records should be readily availed to the relevant Lead Agencies when required, to ensure proper monitoring of project operations.
- (xxxiii) These conditions of approval are in addition to any other applicable Condition in this Certificate or relevant law.

5.0 NOTIFICATION PHASE CONDITIONS OF APPROVAL

- (xxxiv) Seek written approval from this Authority for any operational changes under this Certificate.
- (xxxv) Ensure that this Authority is notified of any malfunction of any component of the Project within 12 hours, and mitigation measures put in place.
- (xxxvi) Submit to this Authority a written notice of intent to decommission project activities **3 (three) months** in advance.

6.0 DECOMMISSIONING AND RESTORATION PHASES CONDITIONS OF APPROVAL

- (xxxvii) Ensure that a decommissioning plan is submitted to this Authority for approval at least **3 (three) months** prior to decommissioning the project components.
- (xxxviii) Decommission the project components when their life-span come to an end as per the decommissioning plan, and/or as will be prescribed by the relevant Lead Agencies.



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- (xxxix) Restore all parts of the project site laid bare during the conduct of construction activities and decommissioning phase by proper landscaping and re-vegetation using suitable indigenous species of trees/grass.
- (xl) Ensure to avoid introduction to and spread of alien/invasive plant species across the project area.
- (xli) Ensure that all pollutants and polluted material is contained and adequate mitigation measures provided for safe disposal of the same during this phase of the project.

7.0 SUSPENSION / WITHDRAWAL / CANCELLATION CONDITIONS

- (xlii) This Certificate of Approval may be withdrawn or cancelled due to the following:
 - (a) if there is no compliance with any of the **Specific Conditions** set out in this Certificate in Section 1.0 above, and any other substantive general provisions of this Certificate;
 - (b) where there is a substantial modification of the project implementation or operations which may lead to the emergence of un-assessed adverse environmental impacts that were not evaluated at the time of issuing this Certificate of Approval; and,
 - (c) where there arise substantive undesirable effects that were not contemplated by the time of issuance of this Certificate of Approval.

DATED AT KAMPALA ON 2ND AUGUST, 2017

Signed:

EXECUTIVE DIRECTOR (NEMA)

c.c. The Permanent Secretary,
Ministry of Agriculture, Animal Industry and Fisheries,
ENTEBBE.

Attn: The Director, Directorate of Crop Resource.

c.c. The Director,
Directorate of Water Resources Management,
ENTEBBE.



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

- c.c. The Chairperson LC-V,
Bulambuli District Local Government,
BULAMBULI.
- c.c. The Chairperson LC- V,
Kween District Local Government,
KWEEN.
- c.c. The Resident District Commissioner,
Bulambuli District,
BULAMBULI.
- c.c. The Resident District Commissioner,
Kween District,
KWEEN.
- c.c. The Chief Administrative Officer,
Bulambuli District Local Government,
BULAMBULI.
- c.c. The Chief Administrative Officer,
Kween District Local Government,
KWEEN.
- c.c. The District Environment Officer,
Bulambuli District Local Government,
BULAMBULI.
- c.c. The District Environment Officer,
Kween District Local Government,
KWEEN.
- c.c. The Sub-county Chief,
Bunambutye Sub-county,
BULAMBULI.
- c.c. The Sub-county Chief,
Ngenge Sub-county,
NGENGE.



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)

NEMA/4.5

Wednesday 8th August, 2018

The Permanent Secretary
Ministry of Agriculture, Animal Industry and Fisheries,
P. O. Box 102,
ENTEBBE

Telephone: +267-414-531411 / 531135 / 320004

NEMA House
Plot 17,19 & 21, Jinja Road.
P.O.Box 22255, Kampala, UGANDA.

Tel: 256-414- 251064, 251065, 251068
342758, 342759, 342717

Fax: 256-414-257521 / 232680

E-mail: info@nemaug.org

Website: www.nemaug.org

ATARI RIVER PROTECTION ZONE

Reference is made to your letter, dated 11th June, 2018, in which you sought clarity regarding your proposal to use the hypothetical centerline to demarcate the protection zone of River Atari in the project area.

During the review of the project environmental and social impact assessment (ESIA) report, we noted that River Atari is very sinuous, challenging the application of Regulation 29(2) of the National Environment (Wetlands, Riverbanks and Lakeshores Management) Regulations, 2000, especially where use of dykes requires that they do not follow a river's plan. It is against this background that we suggested use of the most appropriate design, such as what is contained in your proposal, in order to mitigate floods and reserve appreciable amount of land for all-year-round cultivation. **However, this will apply to the 3km section of the river in the project area, stretching from the headworks to the end of the project area, where the protection zone, either side of the centerline, should range from 30m to 40m.** It is important that the area outside this zone is put to agricultural use, or where necessary portions are reserved for conservation.


Dr. Jerome Sebadduka Lugumira

For: EXECUTIVE DIRECTOR


- c.c: The Commissioner
Wetlands Management Department,
Ministry of Water and Environment,
KAMPALA
- c.c: The District Environment Officer
Bulambuli District Local Government,
BULAMBULI
- c.c: The District Environment Officer
Kween District Local Government,
KWEEN

資料-9. 聴取録

1 鳥類モニタリング方法

1-1	Ramsar Center for Eastern Africa (Ministry of Water and Environment ¹)	
面談者：	<ul style="list-style-type: none">- Ms. Lucy Iyango 氏 (Assistant Commissioner, Dept. of Wetland Management, MWE)- Mr. Vincent Barugahare 氏 (Principle Wetland Officer, Dept. of Wetland Management, MWE)	
参加者：	<ul style="list-style-type: none">- Mr. Allan Ollando (Dept. of Agriculture Infrastructure, Mechanization & Water for Agricultural Production (DAIMWAP), MAAIF)- 石川秀樹 (環境配慮)- Ms. Adomo Esther (調査団アシスタント)	
面談日：	2018年8月15日	
面談場所：	MWE 事務所 (カンパラ)	
面談内容：	<ul style="list-style-type: none">- 当組織ではアタリ地区ならびにオペタ湖での鳥類調査は実施していないため、モニタリング方法については Nature Uganda にて確認すること。- 一般的に、工事騒音や夜間照明が鳥類の補食に影響すると想定される。また、工事用機材からのオイル漏れも生物多様性に多大なる影響を与える。- 現段階ではウガンダにおいてこれらの課題に対する”good practice”と言える緩和策はない。アタリプロジェクトでは、これらの影響を考慮し、適切に事業を実施して欲しい。また、道路や水路の建設による生物の往来の妨げを最小限にして欲しい。- 環境保全の観点から、無農薬農法のみが有効と考える。	

¹ MWE は Ramsar Center for Eastern Africa の一構成メンバーである。

1-2	Nature Uganda (Birdlife International) ² 
面談者：	- Achilles Byaruhanga 氏 (Executive Director)
参加者：	- Mr. Allan Ollando (DAIMWAP, MAAIF) - 石川秀樹 (環境配慮) - Ms. Adomo Esther (調査団アシスタント)
面談日：	2018 年 8 月 15 日
面談場所：	Nature Uganda 事務所 (カンパラ)
面談内容：	<ul style="list-style-type: none"> - ビシナ-オペタ湖周辺は Important Bird Area (IBA)であるため、Nature Uganda では 1 月および 7 月の年 2 回鳥類モニタリングを実施している。 - 特に Fox's Weaver (<i>Ploceus spekeoides</i>)³はウガンダ唯一の固有種としてモニタリングを実施している。"Global Threaten Species"や"Uganda List of Threatened Speies"⁴において生息している旨報告されているが、実際には 2008 年以降の調査で生息は確認されていない。 - オペタ湖における鳥類モニタリングは Nature Uganda で実施しているため、アタリプロジェクトによるモニタリングは不要である⁴。 - 鳥類モニタリング方法としては、ポイントセンサスおよびラインセンサスもあるが、どちらの方法でも問題はない。 - アタリプロジェクトについて、ポイントセンサスの場合であればプロジェクト対象地区内外で調査し、調査結果を比較するとよい。観測地点は、プロジェクトサイト内 (FS 時調査と同じ 4 地点)、プロジェクトサイト外 (2ヶ所、プロジェクトサイトから 1km 程度離れた水田内) を選定すること。調査頻度は、Nature Uganda の実施内容と同様に年 2 回 (1 月と 7 月) でよい。 - 鳥類に対する緩和策の実例は MAAIF より情報入手可能と考える。 (ただし、MAAIF ならびに NEMA は鳥類に対する緩和策の実例がないため、情報入手はできなかった。)
提供資料一覧：	<ul style="list-style-type: none"> - Monitoring Results around Lake Opeta (as of Sep. 2018)

² Nature Uganda はウガンダ国内の環境 NGO であり、Birdlife International のパートナーである。また、International Union for Conservation of Nature (IUCN)の構成メンバーでもある。

³ 和名ウガンダウロコハタオリ。

⁴ Nature Uganda で実施している鳥類モニタリング結果については、直接 Nature Uganda に問合せすれば入手可能である。

1-3	マケレレ大学 
面談者：	<ul style="list-style-type: none"> - Prof. Derek Pomeroy (Professor of Zoology) - Dr. Herbert Tushabe (Manager, National Biodiversity Data Bank Department of Environmental Management (DEM))
参加者：	<ul style="list-style-type: none"> - 石川秀樹 (環境配慮) - Ms. Adomo Esther (調査団アシスタント)
面談日：	2018年8月22日
面談場所：	マケレレ大学
面談内容：	<ul style="list-style-type: none"> - モニタリング対象の4種について生息しているとみられるが、現時点では定かではない。ただし、Fox's Weaver (<i>Ploceus spekeiodes</i>)の個体数は減少しているものと考えられる。Pallid Harrier (<i>Circus macrourus</i>)⁵および Shoebill (<i>Balaeniceps rex</i>)⁶はオペタ湖に生息する。また、Gray-crowned Crane (<i>Balearica regulorum</i>)⁷は過去にアタリ地区周辺にて確認された。 - モニタリング方法として、Nature Uganda ではラインセンサスを実施していた。プロジェクト対象地区にてラインセンサスを実施する場合、Fig. 1 のルートにて実施するとよい。 - オペタ湖における鳥類モニタリングは Nature Uganda にて実施されているため、アタリプロジェクトによるモニタリングは不要である。 <div style="text-align: center; margin-top: 20px;">  </div> <p style="text-align: center; margin-top: 10px;">Fig. 1 提案されたラインセンサスのルート</p>

⁵ 和名ウスハイイロチョウビ

⁶ 和名ハシビロコウ


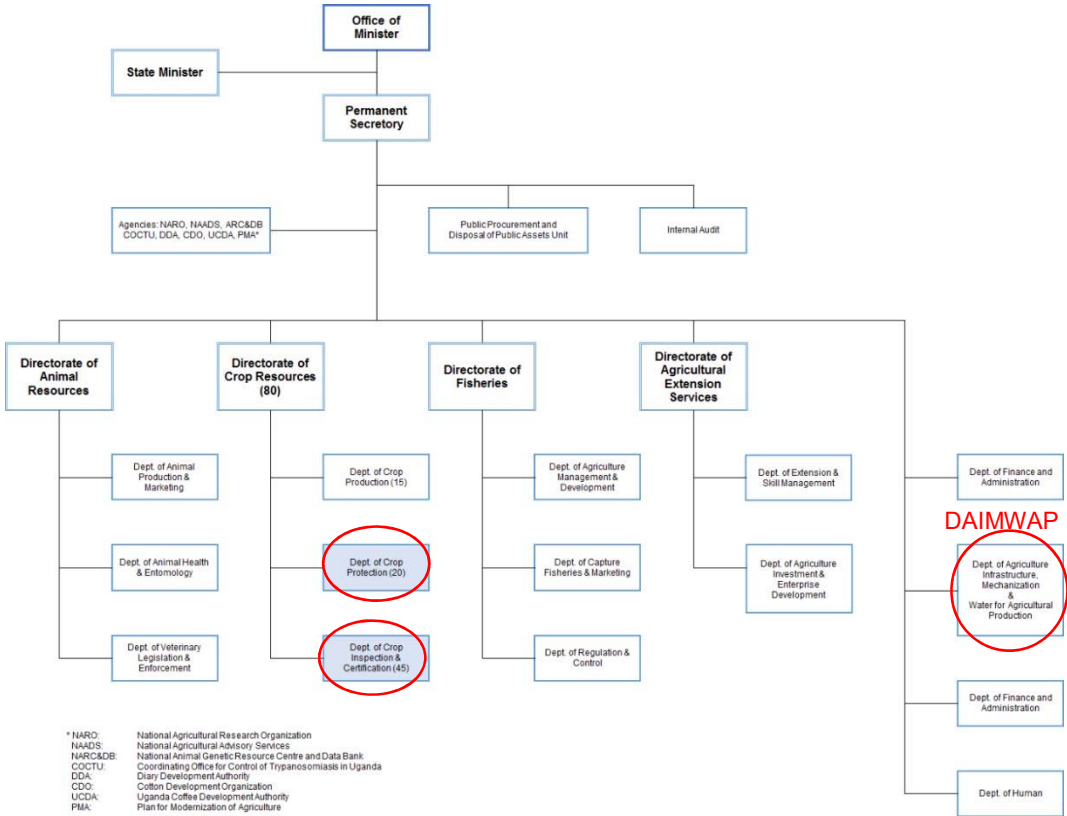
⁷ 和名ホオジロカンムリヅル


資料: Nature Ugandaから提供されたオペタ湖周辺のモニタリング結果


Species Name	Sum of Number of individuals						
	2014/2/13	2014/8/14	2015/1/23	2015/7/31	2016/7/24	2018/2/19	2018/7/10
African Fish Eagle	1						
African Jacana	19	2	42	3	9	8	6
African Marsh Harrier	1			1			
African Open-billed Stork	9	3	16	4	2		
African Pygmy Goose			23				
Black Crake	14	1	12	4		4	7
Black-headed Heron	2				1		
Cattle Egret	4		1	8	3		2
Common Moorhen	2						
Common Sandpiper	1						
Common Squacco Heron	53	10	40	2	2	16	1
Eurasian Marsh Harrier	4		1				
Fulvous Whistling Duck			8	1			
Goliath Heron	3		1	1			
Great Egret		10					
Green-backed Heron	4	1	1	4	3	1	
Grey Heron	13						
Gull-billed Tern						3	
Hadada Ibis	1						
Lesser Jacana	12	4	10	2	4	11	
Little Bittern	4	1		4			7
Little Egret							3
Long-tailed Cormorant	216	66	172	38	22	45	1
Long-toed Plover	5	4	9			2	3
Malachite Kingfisher	15	2	17	9	1	17	
Pied Kingfisher	24	1	18	7	2	16	
Purple Gallinule							2
Purple Heron	15	46	10	11	3	8	4
Purple Swampphen	9						
Whiskered Tern						14	
White-faced Whistling Duck	43		79	2			
White-winged Tern	54		111			10	
Wood Sandpiper	1		1			1	
Yellow-billed Egret						1	
Grand Total	529	151	572	101	52	157	36


Source: Nature Uganda (As of September, 2018)


2 農薬・肥料管理計画

2-1	Dept. of Agriculture Infrastructure, Mechanization & Water for Agricultural Production (DAIMWAP), MAAIF	
面談者：	- Mr. Allan Ollando (Engineer)	
参加者	- 家泉達也 (業務主任者／灌漑施設計画) - 石川秀樹 (環境配慮) - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント)	
面談日：	2018年8月23日	
面談場所：	MAAIF 事務所 (エンテベ)	
面談内容：	<ul style="list-style-type: none"> - MAAIF 内で農薬・肥料に関する主幹部署は Directorate of Crop Resources 傘下の Dept. of Crop Protection ならびに Dept. of Crop Inspection & Certification である (Fig. 2)。 - 一般論として、農薬・肥料に関する課題には適正使用や管理にかかる農家の知識や情報へのアクセスが不足していることが課題として挙げられる。このため、農家に対する sensitization (いわゆる「啓蒙活動」) が必要である。 - Agricultural Chemicals (Control) Act, 2006 に基づき、ウガンダ国内で農薬・肥料の販売を行う場合、Dept. of Crop Inspection & Certification が中心となって行われる検査を経て発行される許可が必要となる。 	
 <p>* NARO: National Agricultural Research Organization NAADS: National Agricultural Advisory Services NARC&DB: National Animal Genetic Resource Centre and Data Bank COCTU: Coordinating Office for Control of Trypanosomiasis in Uganda DDA: Dairy Development Authority CDO: Cotton Development Organization UCDA: Uganda Coffee Development Authority PMA: Plan for Modernization of Agriculture</p>		
Fig. 2 MAAIF 組織図		

2-2	コメ振興プロジェクト Promotion of Rice Development (PRiDe) Project	
面談者：	- 宮本輝尚氏（JICA 専門家）	
参加者	- 家泉達也（業務主任者／灌漑施設計画） - 石川秀樹（環境配慮） - 志賀あゆみ（社会配慮）	
面談日：	2018年8月24日	
面談場所：	NaCRRI 研究所（カンパラ）	
面談内容：	<ul style="list-style-type: none"> - 一般論として、農薬・肥料の適正使用に関する農家の知識が不足している。同様に、District および Sub-county レベルの普及員（Agriculture Officer (AO)や Assistant Agriculture Officer (AAO)）の知識についても不十分であるのが実情である。 - Agricultural Chemicals (Control) Act, 2006 に基づき、Dept. of Crop Inspection & Certification が管理する登録農薬・肥料リストに記載された製品のみが認められているが、実際には上記リストに記載されていない製品も市場に出回っている。市場に出回る農薬・肥料を調査・管理する体制が十分に整っていないことが要因と考えられる。 - 農薬・肥料の適正な使用量と使用タイミングを遵守する条件下においては、環境への影響は大きくないものと考えられる。特に、農薬については水質汚染の懸念があるとされるも、重金属物質が流出しない限り深刻な環境負荷はないと認識している。 - ウガンダ国全体として農薬・肥料の使用が徐々に増加傾向にあることや、農家からの要望があることから、今後 PRiDe においても農薬・肥料の使用について研修カリキュラムとして取り組むことを予定している。 - PRiDe 作成の『稲作マニュアル』では農薬・肥料の使用そのものについては禁止しておらず、市場で入手可能な Urea や DAP などの適切使用による稲作の生産性増大を目指している。 - PRiDe では、研修実施後の農家の営農状況のモニタリングは AO や AAO に依頼して実施している。 	
提供資料一覧：	<ul style="list-style-type: none"> - PRiDe News Letter 1～5 - PRiDe Brochure - PRiDe Magazine - PRiDe フェーズ II 普及手法紹介（日本語） - 研修マテリアル（Program Trainings of Trainer (TOT)、TOT North 3 days）、他 	

2-3	Dept. of Crop Inspection & Certification, Directorate of Crop Resources, MAAIF	
面談者：	<ul style="list-style-type: none"> - Mr. Mwanja John (Acting Assistant Commissioner) - Mr. Okello Deo (Agricultural Inspector) 	
参加者	<ul style="list-style-type: none"> - 家泉達也 (業務主任者／灌漑施設計画) - 石川秀樹 (環境配慮) - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント) 	
面談日：	2018年8月28日	
面談場所：	MAAIF 事務所 (エンテベ)	
面談内容：	<ul style="list-style-type: none"> - Dept. of Crop Inspection & Certification の傘下に 1) National Seed Inspection & Certification、2) Phytosanitary & Quarantine、3) Agrochemicals の3つの Division がある。 - Agricultural Chemicals (Control) Act, 2006 に基づき、Division of Agricultural Chemicals は Agricultural Chemicals Board (ACB)の Secretary を担う。 - Dept. of Crop Inspection & Certification は WB 出資プロジェクト (Agricultural Cluster Development Project (ACDP)) の一構成メンバー。 - 市場では農薬・肥料の偽造品が出回っており、農家が効果的な正規製品を選べない点が課題に挙げられる。 - 現状では偽造品をチェックする体系的なシステムはない。ただし、Agricultural Inspector が偽造品を見つけた場合、農薬・肥料に関する事象を担当する検察官まで報告し、同警察官がサンプルを回収して Ministry of Internal Affairs 傘下の Directorate of Governmental Analytical Laboratory (DGAL) に持込み、検査することもある。 - MAAIF には Dept. of Crop Inspection & Certification 傘下の研究所や National Agricultural Research Organization (NARO) 等もあるが、検査機材が十分に整備されていないため、DGAL や Ministry of Trade, Industry and Co-operatives 傘下の Uganda National Bureau of Standards (UNBS) に検査を委託している状況。 - ウガンダでは海外で製造された農薬・肥料の輸入に依存しており、製造そのものを行う業者は現時点では存在しない。ただし、輸入品を再パッケージする業者は3社あり。これらは全て Agricultural Chemicals (Control) Acts, 2006 によって正式に登録された業者である。 - 適切な使用を実践すれば、農薬・肥料の使用そのものは問題ないが、空の容器の管理が問題になり得るため、農家に対する sensitization が必要である。 - アタリプロジェクトの Agricultural Chemicals Management Plan (ACMP)の目次構成について、概ね問題はない。 	

2-4	マケレレ大学 
面談者：	- Dr. Tenywa Moses (Professor Soil and Water Management)
参加者	- 家泉達也 (業務主任者／灌漑施設計画)
	- 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント)
面談日：	2018年8月29日
面談場所：	マケレレ大学
	<p>面談内容：</p> <ul style="list-style-type: none"> - 過剰に肥料が投入された場合、土壌などに吸収されずにオペタ湖まで流出し、富栄養化の原因となる可能性がある。また、水域（表流水や地下水）に浸透すると、酸化を引き起こす肥料もある。 - 農薬・肥料使用による環境への影響を緩和するには、物理的、科学的、生物学的アプローチなどが考えられる。 - 農家により、1) 肥料の投入割合や分量を決定するための土壌テスト、2) 肥料の種類選定や使用方法、3) 投入のタイミングの3点が適切に行われた場合、環境への深刻なダメージは想定されない。 - アタリプロジェクトのACMPの目次構成について、概ね問題はない。

2-5	<div style="text-align: right;">  </div>
面談者：	<ul style="list-style-type: none"> - Mr. Oule Herbert (Senior Environmental Specialist)
参加者	<ul style="list-style-type: none"> - Mr. Allan Ollando (Engineer, DAIMWAP, MAAIF) - 家泉達也 (業務主任者／灌漑施設計画) - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント)
面談日：	2018年8月29日
面談場所：	WB事務所 (カンパラ)
面談内容：	<ul style="list-style-type: none"> - WBは2016年8月に Environmental and Social Framework (ESF) と呼ばれる新ポリシーを採択した。2018年10月以降に実施されるプロジェクトについては、このESFが適用されることとなるが、それ以前のプロジェクトについては引き続き11の Operational Policies (OP 4.01 Environmental Assessment や OP 4.09 Pest Management 等) からなる The Environmental and Social Safeguard Polices が適用される。 - 農薬・肥料の使用程度または量が少ないと想定されるプロジェクトについては、Environmental Impact Assessment (EIA) または Environmental and Social Management Framework (ESMF) ¹の一部として病害虫管理について記載するが、使用程度または量が多いと想定されるプロジェクトについては、EIA または ESMF とは別に Pest Management Plan (PMP) が作成される。なお、ACDPの場合、農家グループ毎に農業資機材投入の支援が行われるため、農薬・肥料の使用量が増えると想定されたことから ESMF とは別に PMP が作成された²。 - WB プロジェクトのうち PMP 作成が必要と判断されたものについては、PMP に国内法 (Agricultural Chemical (Control) Act, 2006) に基づき登録された農薬・肥料についての1) 調達方法、2) 移送・輸送方法、3) 貯蔵管理方法、4) 投入・使用方法、5) 廃棄方法の5つの観点について記載される。 - 現時点で農家の農薬・肥料の使用量は多くない状況だが、ACDP の中で関係省庁ならびに県行政官に対して農薬・肥料に関する研修を行った。なお、WBは相手国政府のオーナーシップを強調しており、あくまで相手国政府の行政官への研修までを実施している。言い換えると、WBが個別の農家に対して直接研修することはない。 - WBは各国で実施している行政官向けの研修機材をプールしており、必要に応じて改訂しながら使用している。上記WB方針から、個別農家向けの研修教材は作成していない。 - ACDPでは、ウガンダ国内法により登録された農薬・肥料を農家グループ単位で配布するコンポーネントが含まれているが、現時点ではまだ実施されていない。 - 農薬・肥料の使用法もさることながら、やはり適切な空容器の処理方法を理解・実施している農家が少ないことが課題である。また、農薬・肥料を使用する際、適切な保護装具を身につけていない農家が多い。

¹ ESMFはプロジェクトが一連のプログラムおよび／またはサブプロジェクトを含む場合、また、プログラムまたはサブプロジェクトの詳細が特定されるまで影響が決定出来ない場合に関連する課題や影響を調べることを目的とした文書。同文書は環境・社会的影響を評価するための原則、規則、ガイドラインおよび手続きを定めている。また、プロジェクトによる負の影響を軽減、緩和、相殺するための計画や措置が含まれる他、正の影響の強化やこれら緩和策に対する費用の算出や予算編成のための規定、プロジェクトの影響に対処する責任を有する組織などの情報が含まれる。


² PMPの作成要件の詳細は Bank Procedures (BP) 4.01 Annex-C に規定されている。


2-5


世界銀行 (WB)




- ウガンダでは農薬・肥料の安全な使用に関する報告が不十分かつ、どの農薬・肥料が使用されているかについての情報が乏しい。
- 政府の能力について、WB が相手国政府に出資する場合、まず相手国政府のキャパシティ分析を実施してこの結果に基づくキャパシティ開発を行う。ウガンダの場合、MAAIF 内に環境官を配置して MAAIF のキャパシティの強化を図っている最中である。
- WB が MAAIF に派遣している環境官は、WB が MAAIF に対して出資するプロジェクト全般の環境社会配慮事項(特に環境面)について活動を行う。具体的な Terms of Reference (TOR) は MAAIF のキャパシティ強化の他、環境配慮を実施する現地コンサルタントの雇用ならびに監督である。
- WB は、国内法 (Agricultural Chemicals (Control) Act, 2006) に基づき登録された農薬・肥料については使用を認めている。その最新情報については、MAAIF または ACB に確認すること。
- アタリプロジェクトの ACMP の目次構成について、概ね問題はない。




2-6	Dept. of Crop Protection, Directorate of Crop Resources, MAAIF	
面談者： - Mr. Kutunga David (Senior Agriculture Officer)		
- 家泉達也 (業務主任者／灌漑施設計画)		
参加者 - 志賀あゆみ (社会配慮)		
- Ms. Adomo Esther (調査団アシスタント)		
面談日： 2018年8月30日		
面談場所： MAAIF 事務所 (エンテベ)		
面談内容：		
<ul style="list-style-type: none"> - Dept. of Crop Protection の傘下に 1) Pest and Disease Control、2) Diagnosis and Epidemiology の 2 つの Division がある。 - Dept. of Crop Protection は Dept. of Crop Inspection & Certification と同様に ACDP の構成メンバーであり、Mr. Kutunga は Component Management の担当者である。 - 元来ウガンダは肥沃な土壌であるため、農薬・肥料の使用は必要とされてこなかった。しかし、ウガンダ国政府が自給的農業から商業的農業への転換を図っていることもあり、今後は農薬・肥料の投入量増加が見込まれる。実際に、これまで農薬・肥料の投入はメイズ栽培で行われてきたが、近年ではコメ栽培でも使用されるようになっている。 - メイズの生産量に関して、例えばヨーロッパ平均 8ton/ha を得ているのに対し、ウガンダでは 3ton/ha に留まるなど、土壌劣化が原因と考えられる収量減少が見られ、将来的に (特に肥料の) 投入は避けられない。 - 肥料については、国内での生産を目的としてウガンダ国東部の Tololo に中国企業が製造工場を建設している最中である。農薬・肥料を輸入に依存していた状況から抜け出し、農家が安価な商品へアクセスし易くなるものと期待される。 - 将来的に農薬・肥料投入が増加すると予想されているため、ウガンダ国政府は Fertilizer Policy を作成している。なお、同国政府は農薬・肥料の使用を禁止しているのではなく、Integrated Pest Management (IPM) の原則に則り適切な使用 (種類や分量、タイミング) を促す活動 (農家への sensitization 等) を通じて管理する方針である。 - 農家の sensitization の内容として、農薬・肥料が環境ならびに人体にとって危険なものであり取り扱いには細心の注意が必要であること、農薬・肥料の投入タイミングが重要であること、輸出志向のため EU 基準等に則り残留農薬を減らすことなどが挙げられる。 - 農産物における残留農薬について、輸出向けは輸出先の要件 (基準) に合致しているかに焦点が当てられる。また、ロッテルダム条約等の規定内容や国内法 (Agricultural Chemicals (Control) Act, 2006) に準拠してモニタリングを行う。 - ACDP 実施上の課題は以下の通り。 <ul style="list-style-type: none"> 1) 病虫害蔓延にかかる緊急処置について、資機材調達に時間を要すること。 2) 分析機関の装備および人的キャパシティが不足していること。 - 農薬・肥料の使用は、土壌に浸透後、水域 (地下水ならびに表流水) へ至り環境面での影響を引き起こす可能性があることから、緩和策を実施している。具体的な事例として、ラジオ番組を通じた sensitization や農業普及員研修を行っている。 - ラジオ番組は広域かつ直接農家を啓蒙することが可能で、農薬・肥料の適正使用や Plant Health などの情報について共有している。放送は不定期に必要なに応じて行われる。 - 農業普及員研修については、MAAIF の既存の農業普及システムを活用し、県 Crop Protection 部署を通じて Sub-county に配置されている AO に対して作物栽培の観点から農薬・肥料の適正使用や IPM 戦略等について定期的に研修を実施している。 - アタリプロジェクトの ACMP の目次構成について、概ね問題はない。 		



2-7	Dept. of Crop Inspection, Directorate of Crop Resources, MAAIF	
面談者：	- Mr. Otut Alex (Senior Agricultural Inspector)	
参加者	- 家泉達也 (業務主任者／灌漑施設計画) - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント)	
面談日：	2018年8月31日	
面談場所：	MAAIF 事務所 (ナマレレ)	
面談内容：	<ul style="list-style-type: none"> - 現在 ACB が最新版の農薬・肥料に関する研修教材のレビューを行っている。改訂前のバージョンでは肥料についての記載がなかったが、最新版にはこれが含まれている。 - ウガンダにおける典型的な病害虫の例として、メイズ生産に影響を与える Fall Army Worm の大量発生が挙げられる。Pest Distribution Map には病害虫の影響を受けている地域、大量発生の要因、収集方法について記載されている。これは影響を受けていない地域への更なる広がりを防ぐことに寄与するものと期待される。 - 現時点で農薬・肥料に関する環境基準はない。東アフリカ共同体においても、共通基準が整備中の段階である。他方で、使用する農薬・肥料の種類は農家の経済(所得)状況に応じて決定されるものであるため、各地域の農家の経済(所得)状況という観点も考慮した上で基準を設定する必要がある。 	


2-8	National Water & Sewerage Corporation (NWSC) ³ , MWE 
面談者：	<ul style="list-style-type: none"> - Mr. Deake Mubiru (Principle Research Officer)
参加者	<ul style="list-style-type: none"> - 家泉達也 (業務主任者／灌漑施設計画) - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント)
面談日：	2018年8月31日
面談場所：	NWSC 研究所 (カンパラ)
面談内容：	<ul style="list-style-type: none"> - 現時点で NWSC が分析可能な基準やパラメーターに農薬・肥料に関する項目は含まれていない。また、NWSC は水質分析のみを行っており、土壌分析は行っていない。 - NWSC では実験室の整備を行っており、おそらく来年頃までには水中の残留農薬の試験を開始することが出来る見込みである。 - 環境の議論については NEMA が責任機関であり、何らかの基準を設定している。 (ただし) - Uganda National Bureau of Standards (UNBS) はウガンダ国内の基準を設定する責務を負い、農薬・肥料に関する環境基準についても設定している可能性がある。

³ NWSC はウガンダ国政府が 100%出資している公社である。1972 年に現行の The National Water and Sewerage Corporation Act, 1995 により設立された。同法の責任機関は MWE である。

2-9	National Agricultural Research Organization (NARO), MAAIF	
面談者：	- Mr. Deake Mubiru (Principle Research Officer)	
参加者	- 家泉達也 (業務主任者／灌漑施設計画) - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント)	
面談日：	2018年9月3日	
面談場所：	NARO 研究所 (カワンダ)	
面談内容：	<ul style="list-style-type: none"> - NARO では主に土壌中の栄養素に焦点を当ててモニタリングを実施している。農薬・肥料の使用による環境影響に関するモニタリングは実施していない。 - 現在 NARO は施設設備の課題を抱えているため、十分に機能していない状況である。ただし、必要な資機材の調達が行われている最中で、これらが届き次第食品テスト等を行う予定である。 - 政策的観点からすると、ウガンダ国において農薬・肥料の規定が十分ではなく、また ACB も十分に機能していない。ただし、国家薬物局により家畜用の薬品については、非常によく管理されている。国内法によって登録されていない農薬・肥料の販売業者が見受けられるが、これは ACB の責務であると考える。 - 読み書きの出来ない農家はラベルの記載内容が理解出来ないため、農薬・肥料を誤用する傾向がある。農薬・肥料の使用そのものは誤りではないが、誤用されると非常に危険である。 - 農家が使用期限切れの農薬・肥料の適切な処分方法を知らない。また、農薬・肥料の容器を水域近くで洗浄する農家があり、これは水域の汚染を引き起こす可能性がある。 - 通常 NARO ではアメリカの Environmental Protection Agency (EPA) の基準や EU の基準を参考値として使用している。 	

2-10	  															
面談者：	<ul style="list-style-type: none"> - Mr. Robert Charles Aguma (Environmentalist dispatched by WB) 															
参加者	<ul style="list-style-type: none"> - 家泉達也 (業務主任者／灌漑施設計画) - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント) 															
面談日：	2018年9月3日															
面談場所：	MAAIF 事務所 (エンテベ)															
面談内容：	<ul style="list-style-type: none"> - 近年ウガンダ国においても農薬・肥料の使用量が増加しているが、自給的農業を行っている農家においてはまだ低い水準である。大部分が園芸作物(サトウキビ等)などの大規模な商業的農業を行っている農家によって、土壌の肥沃度を高めることを目的として肥料が使用されている。 - ACDP は6年間のプロジェクトであり、2017年11月より開始されている。 - ACDP の事業コンポーネントは以下の通りである。 <ol style="list-style-type: none"> 1) 農家当たり毎シーズン 180USD ドル分の補助金による農業強化 <ul style="list-style-type: none"> ・補助金は農家グループ単位にて支給される。 ・ACDP と農家官での費用負担の規定は以下の通りである。 <table border="1"> <thead> <tr> <th>Year</th> <th>Farmer</th> <th>ACDP</th> </tr> </thead> <tbody> <tr> <td>1st Year</td> <td>33 %</td> <td>67 %</td> </tr> <tr> <td>2nd Year</td> <td>50 %</td> <td>50 %</td> </tr> <tr> <td>3rd Year</td> <td>67 %</td> <td>33 %</td> </tr> <tr> <td>4th Year</td> <td>100 %</td> <td>- %</td> </tr> </tbody> </table> ・投入財は E-voucher で提供される。登録された農薬・肥料販売業者には機械が支給され、農家が資材を購入する際に販売業者が領収書を発行する。農家は主に農薬・肥料を購入すると想定されるが、WB が文化的、生物学的アプローチといった IPM を推奨していることから、農薬肥料の購入は積極的に行われるものではない。言い換えると、農薬・肥料の使用は最終手段である。 ・ACDP が農家グループを対象に作物の生長に必要な農薬・肥料の適正量について研修を行う予定である。 2) 市場へのアクセス、道路基盤、農産物施設の整備 <ul style="list-style-type: none"> ・生産性を高めたり、農家が市場にアクセスすることを支援したりする計画がある。 ・生産物の往来を妨げる要因となる壊れた橋梁や湿地を特定し、全長 1,700 km の道路整備・改修を行う予定である。 ・地方生産者団体、農家グループ、農産物共同組合 (Agricultural Commodity Cooperative Enterprise) を対象とした助成金を提供し、1 組織当たり最大 75,000 ドル分の加工または貯蔵施設設備の整備費を支援する予定である。これにより、販売する農産物の量を多くすることで農家がより適正価格(交渉力)を得られ易くなると期待される。 3) 国家レベルの方針や MAAIF 機能の規制強化 <ul style="list-style-type: none"> ・MAAIF が販売農産物の品質を管理することが重要との認識から、国家レベルの方針や MAAIF の機能強化を試みている。 4) 灌漑の促進 <ul style="list-style-type: none"> ・Agricultural Technology and Agribusiness Advisory Services Project (ATTAS)のもと、13 県の 13 地区において灌漑ポテンシャル評価のため Pre-FS 調査が実施され、Amuru 県、Nwoya 県、Iganga 県、Bugiri 県の 4 地区が選定された。今後は ACDP 	Year	Farmer	ACDP	1 st Year	33 %	67 %	2 nd Year	50 %	50 %	3 rd Year	67 %	33 %	4 th Year	100 %	- %
Year	Farmer	ACDP														
1 st Year	33 %	67 %														
2 nd Year	50 %	50 %														
3 rd Year	67 %	33 %														
4 th Year	100 %	- %														

2-10	<div style="display: flex; justify-content: space-between; align-items: center;"> <div>MAAIF (WB)</div> <div style="text-align: center;">  <p>MAAIF Ministry of Agriculture Animal Industry and Fisheries</p> </div> <div style="text-align: center;">  <p>THE WORLD BANK IBRD • IDA</p> </div> </div>
<p style="text-align: center;">のもと FS 調査ならびに施設設計が行われる予定である。</p> <ul style="list-style-type: none"> - 2017 年にメイズ生産に大きな打撃を与え、ウガンダ国内の多くの地域で不作の原因となった Fall Army Worm の大量発生について、ACDP が対策に出資したことにより、2018 年はメイズが豊作となった。 - ACDP では農家グループ単位での活動を実施しており、個別農家に対する支援は行っていない。ACDP のもと登録した農家グループに傘下する農家選定の条件は以下の通りである。 <ol style="list-style-type: none"> 1) 少なくとも 1acre の圃場を有すること。 2) 農家グループへの傘下の意志があること。 3) 昨期毎に参加料 200,000 UGX を支払うこと。 4) ウガンダの身分証明書を保有していること。 - 農薬・肥料の使用は、使用者に大きな影響を与える可能性があるが、多くの農家は保護装具を身につけていない。ACDP では約 30 県のプロジェクト対象地区のうちパイロット地区でパイロット事業の一環として研修を実施している。 - 農家は空容器を適切に処理しておらず、またゴミ収集のシステムも整備されていない。農家の中には空容器を調味料や飲料水等の保存に使用しているなど、非常に危険な様子も見受けられる。 - ウガンダ国では農薬・肥料による環境影響をモニタリングするキャパシティが不足している。農薬・肥料の使用は適切にモニターされておらず、これに関するデータも蓄積されていない状況である。 - ウガンダ国では NEMA や FAO、WHO などの基準が適用されており、どの基準を適用するかについてはその都度検討されている。例えば、NEMA は水系への廃液の排出基準を定めており、FAO や WHO によって構成される Codex Alimentarius Commission (国際食品規格委員会) は残渣の観点から農薬・肥料の基準を定めている。また、WHO は独自に飲料水基準を設定している。 - アタリプロジェクトの Agricultural Chemicals Management Plan (ACMP) の目次構成について、概ね問題はない。 	

2-11	Uganda National Bureau of Standards (UNBS) ⁴ , Ministry of Trade, Industry and Co-operatives  UGANDA NATIONAL BUREAU OF STANDARDS <small>QUALITY IS LIFE, LIFE IS QUALITY</small>
面談者：	<ul style="list-style-type: none"> - Mr. Hakim Mufumbiro (Manager Standard) - Mr. Maurice Musuga (Senior Information Officer) - Ms. Prossie Nabagala (Senior Standards Officer)
参加者	<ul style="list-style-type: none"> - 志賀あゆみ (社会配慮) - Ms. Adomo Esther (調査団アシスタント)
面談日：	2018年9月3日
面談場所：	UNBS 事務所 (カンパラ)
面談内容：	<ul style="list-style-type: none"> - UNBS は ACB の下部組織 (Agricultural Chemicals Technical Committee) の構成メンバーである。 - UNBS が ACB に対して技術面での報告を行い、ACB がウガンダ国への製品の輸入を申請している業者の申請許認可の是非を検討する。 - ウガンダ国では現在 DGAL や UNBS など複数の政府系研究所があるが、これらを一つに統合する計画が検討されている。 - ウガンダ国内で農薬・肥料を販売する際には許認可が必要となるため、当該セクターの販売業者から需要があった場合に農薬・肥料の構成成分に関する基準が設定される。 - UNBS は「食の安全」という観点からモニタリングを行っており、Codex Alimentarius Commission や EU の Maximum Residue Standards を適用している。 - 現時点でウガンダ国には農薬・肥料に関する環境基準が設定されていないため、UNBS では環境面でのモニタリングは実施していない。 - 省庁からの依頼があれば、UNBS が環境基準を検討・設定することは可能である。

⁴ UNBS は The Uganda National Bureau of Standards Act, 1983 に基づき設立された半官半民の研究機関であり、商品の国家標準仕様や規約を策定する責任機関である。また、商業、産業、健康、安全、社会福祉の標準化を促進する責務を負う。

THE REPUBLIC OF UGANDA
MINISTRY OF AGRICULTURE, ANIMAL
INDUSTRY AND FISHERIES (MAAIF)

PREPARATORY SURVEY

ON

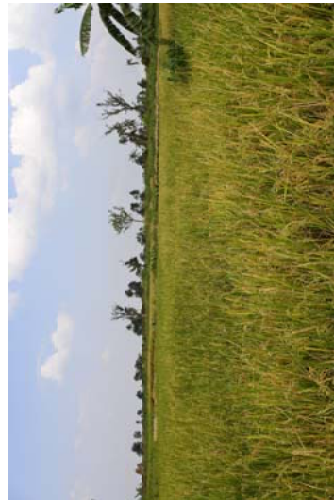
THE PROJECT FOR THE DEVELOPMENT OF
IRRIGATION SYSTEM IN ATARI BASIN AREA

IN

THE REPUBLIC OF UGANDA

AGRICULTURAL CHEMICALS

MANAGEMENT PLAN IN ATARI AREA



OCTOBER 2018

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

SANYU CONSULTANTS INC.

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ABBREVIATIONS

ACB	Agricultural Chemicals Board
ACDP	Agriculture Cluster Development Project
AO	Agricultural Officer
AAO	Assistant Agricultural Officer
DCP	Department of Crop Protection
DCIC	Department of Crop Inspection and Certification
DAIMWAP	Department of Agriculture Infrastructure Mechanization and Water for Agricultural Production
DD	Detailed Design
DGAL	Directorate of Government Analytical Laboratory
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMoP	Environmental Monitoring Plan
ESC	Environmental and Social Considerations
EU	European Unit
FAO	Food and Agriculture Organization of the United Nations
FS	Feasibility Study
GoU	Government of Uganda
GoJ	Government of Japan
IMP	Integrated Pest Management
JICA	Japan International Cooperation Agency
JICA Guidelines	JICA Guidelines for Environmental and Social Considerations
NARO	National Agricultural Research Organization
NGO	Non-Governmental Organization
NEMA	National Environment Management Authority
MWE	Ministry of Water and Environment
OD	Outline Design
OP	Operation Manual
PACC	Project Area Coordination Committee
PRiDe	Promotion of Rice Development Project
TN	Total Nitrogen
TP	Total Phosphorus
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization

CHAPTER 1 INTRODUCTION

1-1 The Project for the Development of Irrigation System in Atari Basin Area

1-1-1 Project Background

Agriculture sector in the Republic of Uganda (hereinafter referred to as "Uganda") is the key industry, since it accounts for 24.5%, 46%² and 72%³ of GDP, exports and employment population, respectively. In recent years, rain-fed agricultural activities were significantly affected, due to changes of rainfall pattern, seemingly by climate change. While the Government of Uganda (hereinafter referred to as "GoU") aims the continuous consolidation of irrigation facilities, it is still under development due to the limit of human resources of the Government and farmers' technical skills. Furthermore, the population increase rate with 3.2% is constitute a limiting factor for the development (2017: 43 million people, 2050: 106 million people estimated; Source United Nations (2017). World Population Prospects: The 2017 Revision). GoU has defined agriculture and irrigation as one of the development sectors with the highest priority in "the National Development Plan (2015/16 - 2019/20) (hereinafter referred to as "NDP II)", "The Agricultural Sector Strategic Plan (2015/16 - 2019/20) (hereinafter referred to as "ASSP")" also emphasizes the necessity of irrigation development and sets a goal of implementation of "competitiveness, profitability and sustainability." Additionally, the latter plan promotes to shift from subsistence agriculture to commercial agriculture through promoting production of rice which is one of commercial crop in Uganda.

In this regards, Japan International Cooperation Agency (hereinafter referred to as "JICA") conducted the Feasibility Study (hereinafter referred to as "the FS") named "The Project on Irrigation Scheme Development in Central and Eastern Uganda (2014-2016)." Atari Area was given the highest priority in 10 candidate sites by the FS, since it has rich water resources and comparative advantage in terms of costs for construction and Operation and Maintenance (hereinafter referred to as "O&M"). Based on the result of the FS, GoU officially requested the Government of Japan (hereinafter referred to as "GoJ") to implement the Outline Design Study (hereinafter referred to as "the OD") for "The Project for the Development of Irrigation System in Atari Basin Area (hereinafter referred to as "the Project")" as the Japanese Grant Aid Project. Currently, the OD has been conducted by JICA OD Team dispatched by JICA since June 2017.

1-1-2 Location of Project Site

The Project Site called as "Atari Area" is located at the border between Bulambuli and Kween districts, where is in the eastern part of Uganda. Administratively, the target irrigation scheme is situated in the two sub-counties, namely, Bunambute Sub-county in Bulambuli District and Ngeenge Sub-county in Kween District.



Source: JICA OD Team

Fig.1-1-1. Location of the Project Site

1 The Central Intelligence Agency, the United State of America (hereinafter referred to as "CIA"), 2017
 2 Central Intelligence Agency in the United States of America (hereinafter referred to as "CIA"), 2016
 3 CIA, 2013

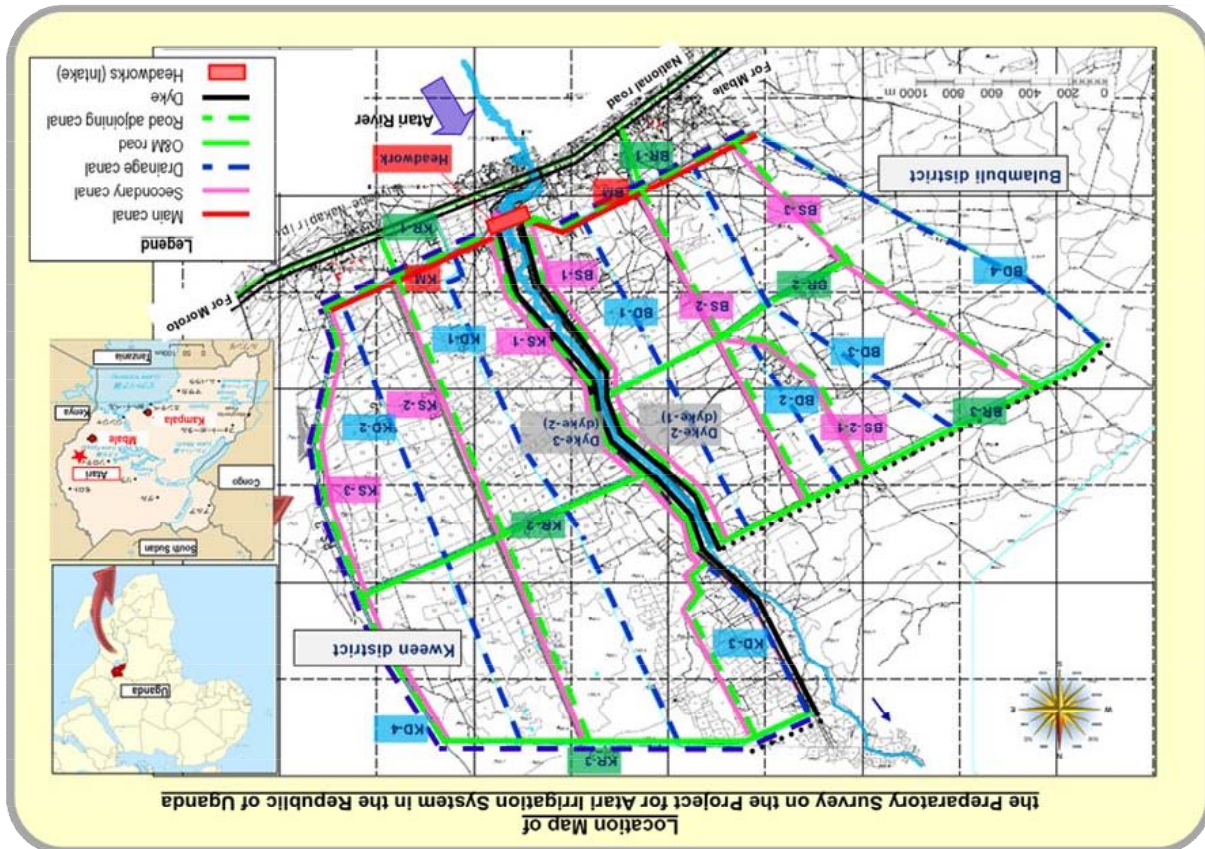


Table 1-1-1. Consist of Project Site

District	Sub-county	Parish	Village
Bulambuli	Bunambutye	Buwebele	Bunambale
			Buwechalo
			Bukhayaki
Kween	Ngenge	Sikwa	Amukokel
			Sikwo
			Soset

Source: MAAIF (2018)

1-1-3 Project Component and Beneficiaries

Through the FS and the OD, the both sides of GoU and JICA agreed to promote productivity of agricultural products of the Project Site which has 680 ha, through construction of irrigation facilities as shown in below table and figure. Additionally, O&M structures will be enhanced. Herewith, it is expected that the stable supply of irrigation water will be emphasized, then the Project contributes to improve income in rural area through multiplication of rice product. Regarding beneficiary farmers, it is estimated at approximately 500 households in the Project Site of 680 ha.

Table 1-1-2. Project Component

Component	Item	Amount	Remarks
Irrigation and Drainage	Headwork	1 place	Movable weir type, intake de-silting basin
	Main canal	2.3 km	Concrete blocking lining
	Secondary canal	15.0 km	Concrete blocking lining
	Tertiary canal	23.5 km	Earth canal
	Drainage canal	18.3 km	Earth canal
Dyke	River Dyke	5.1 km	Both sides, 1.4m height
	Operation and Maintenance road	7.7 km	4m width, laterite pavement with 10mm thickness.
Land Re-organization for model plots	Land leveling etc.	12.0 ha	Both sides, 6ha in each

Source: JICA OD Team

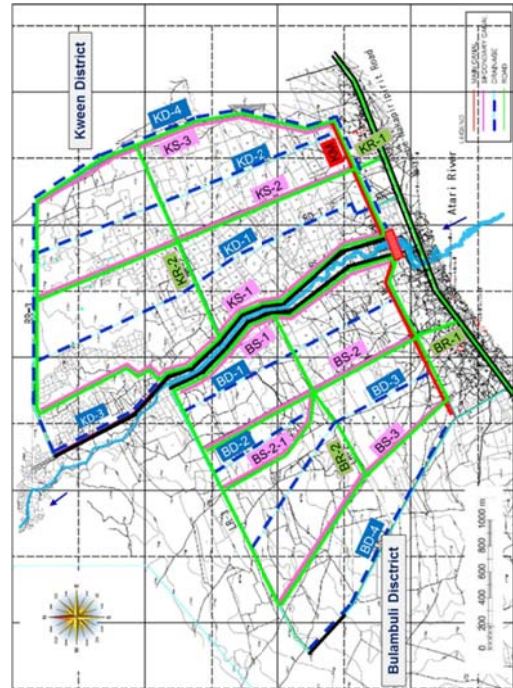
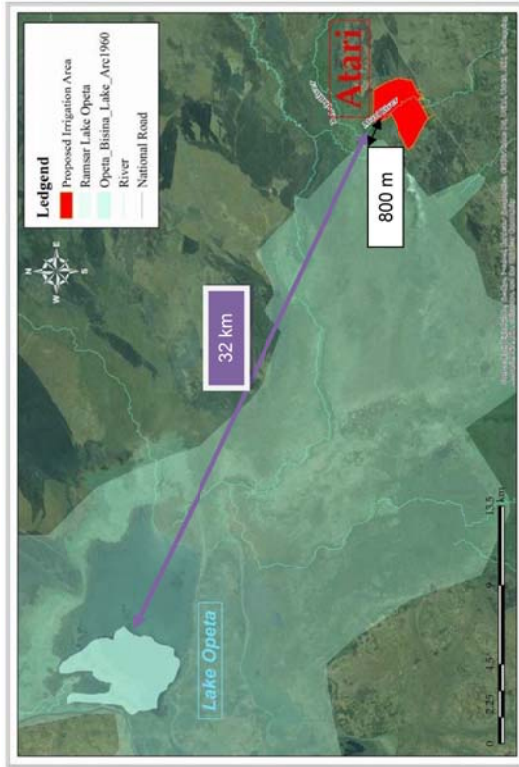


Fig. 1-1-2. Project Component

Source: JICA OD Team

1-1-4 Approval Status of Environment Impact Assessment for the Project

According to "the JICA Guidelines for the Environmental and Social Considerations (hereinafter referred to as "JICA Guidelines," published in April 2010)," the Project is subject to Category A since the Project Site is in neighbor with Lake Opeta which is the one of Ramsar Convention registered wetlands; and be subject to the "Sensitive Area" of the JICA Guidelines (see, Fig. 1-1-3). During the FS, Environment Impact Assessment (hereinafter referred to as "EIA") report was prepared in conformity with regulations of JICA Guidelines and the National Environment Act in Uganda.



Source: "FS Report (JICA)"

Fig. 1-1-3. Distance between Atari River, Ramsar Convention Wetland Area and Lake Opeta

On 2nd August 2017, EIA report for the Project was approved by National Environment Management Authority (hereinafter referred to as "NEMA"), the authorization agency for EIA in Uganda, with several conditions (see, Appendix-6). Through multiple discussions between Ministry of Agriculture, Animal Industry and Fisheries in Uganda (hereinafter referred to as "MAAIF") and JICA, both sides agreed that MAAIF will take action to meet the whole conditions as the implementation agency of the Project (see, Appendix-7). As one of condition described in the Certificate, NEMA pointed out the potential risk by usage of agricultural chemicals as below:

1.0 SPECIFIC CONDITIONS OF APPROVAL

- (xii) Obtain the necessary guidance and approval from MAAIF regarding the range of agrochemicals (artificial fertilizers, pesticides, among others) that are permitted for use in crop farming activities, especially those applicable to irrigation schemes, but also institute a programme that will ensure the conduct of good farming practices, non-reliant on agrochemicals and also less dependent on fertilizers.

For dealing with this condition, both sides of MAAIF and JICA agreed to prepare the Agricultural Chemicals Management Plan for the Project (hereinafter referred to as "ACMP"), and MAAIF ensured to conduct the appropriate training program to farmers, in conjunction with technical supports from JICA (see, Appendix-7).

1-2 Purpose of Agricultural Chemicals Management Plan

Since the farmlands in Uganda are originally fertile in general, the agricultural chemicals have not been used very much historically. However, it is supposed that the application of agricultural chemicals could be increased since GoU emphasizes the change from the subsistence agriculture to commercial agriculture.

Currently, the agricultural chemicals are not used basically in and around the Project Site. However, there is a possibility that the use of agricultural chemicals could be gradually increased in the future due to the policy of conversion from the subsistence agriculture to the commercial agriculture in Atari Area through the development of irrigation facilities for sufficient and stable agricultural water supply by the Project.

The ACOMP is planned including the mitigation measures, training plan and monitoring plan considering anticipated environmental and social impacts of the use of agricultural chemicals in Atari Area. ACOMP covers both pesticides and fertilizers as the "Agricultural Chemicals" based on the definition of national law in Uganda⁴.

1-3 Information from Specialists or Government Officers in Uganda

Through multiple interviews with specialists or governmental officers in Uganda, the following information was given;

Table 1-3-1. Information from Specialists or Government Officers on Management of Agricultural Chemicals in Uganda

No.	Item	Summarized Contents of Interview
1	General	<ul style="list-style-type: none"> Since the farmlands in Uganda are originally fertile in general, the agricultural chemicals have not been used very much historically. However, it is supposed that the application of agricultural chemicals could be increased since GoU emphasizes the change from the subsistence agriculture to commercial agriculture. (MAAIF)
2	MAAIF Organization	<p>[Organization Structure]</p> <ul style="list-style-type: none"> There are two departments on the management of agricultural chemicals in MAAIF, which are the Dept. of Crop Inspection & Certification and the Dept. of Crop Protection under Directorate of Crop Resources. (MAAIF) <p>[Capacity of the Organization]</p> <ul style="list-style-type: none"> Above two departments are member of the Agricultural Cluster Development Project (hereinafter referred to as "ACDP"), financed by the World Bank (hereinafter referred to as "WB"). (MAAIF) An environmental officer dispatched by WB is assigned for the ACDP project for the enhancement of management capacity of MAAIF on environmental and social consideration issues. Trainings of the MAAIF officers are planned with the perspective of the establishment of ownership. (WB)
3	Environmental Impacts	<ul style="list-style-type: none"> There is a possibility that usage of agricultural chemicals may cause negative impacts to environment to water source through surface water and groundwater. (MAAIF) If surplus fertilizers applied, it cannot be absorbed by plants and excess fertilizers will be transported to Lake Opeta, then the eutrophication can be caused finally. Additionally, there are fertilizers that cause acidification, when it leaches into groundwater and water bodies. (Makerere University) Potential negative impacts on agricultural chemical use is not high with the conditions as far as the suitable application and suitable timing of agricultural chemicals use. Especially, for the pesticides use, water pollution is the concern, but high negative impact is not anticipated as far as not being heavy metal materials. (Expert of Promotion of Rice Development Project (hereinafter referred to as "PRiDe"))
4	Mitigation Principles	<p>[Overall]</p> <ul style="list-style-type: none"> Principals of MAAIF does not prohibit the use of agricultural chemicals, but promotes proper use of agricultural chemicals with the idea of Integrated Pest Management (IPM) through the sensitization to the farmers. (MAAIF) WB recommends not to rely only on the agricultural chemicals, but recommends multiple ways of the pest control such as the cultural approaches. (WB Officer in

⁴ The details are described in "3-1 Type of Agricultural Chemicals."

No.	Item	Summarized Contents of Interview
		<p>(MAAIF)</p> <ul style="list-style-type: none"> PRiDe recommends to farmers in the rice cultivation handbook that the commonly used agricultural chemicals in the market are used and the proper application should be done in terms of suitable quantities and suitable timing with the idea of the increasing of rice production and mitigating the impact of environment in parallel. (Expert of PRiDe) <p>[Type of Agricultural Chemicals]</p> <ul style="list-style-type: none"> WB recommends to use the agricultural chemicals which are registered by the Agricultural Chemicals Board. (WB) There are the dealers which sell prohibited agricultural chemicals and the problem is that the farmers don't know that such agricultural chemicals are prohibited to use in farming. (National Agricultural Research Organization (hereinafter referred to as "NARO")) <p>[Proper Application and Handling of Agricultural Chemicals]</p> <ul style="list-style-type: none"> Since some farmers cannot read the label on the agricultural chemical containers, misuse of agricultural chemicals is observed among such farmers. In addition, farmers do not know how to dispose the agricultural chemicals. It is observed that farmers wash agricultural chemicals container directory near water bodies which may cause the water contamination. (NARO) Although the use of agricultural chemicals is harmful for users, most of farmers do not wear protective tools, such as masks, gloves and so on. In addition, some of farmers reuse containers as for keeping seasoener, drinking water, etc. that is dangerous. (WB) Sensitization on the proper application and handling of agricultural chemicals is important since the knowledge of farmers and farmers' information accessibility are not sufficient. (MAAIF) As the activity of the training and sensitization by MAAIF, the trainings of agricultural extension officers, and the sensitization through the radio program are conducted regularly. (MAAIF)
5	Training and Sensitization	<ul style="list-style-type: none"> As the activity of the training and sensitization by MAAIF, the trainings of agricultural extension officers, and the sensitization through the radio program are conducted regularly. (MAAIF)
6	Monitoring	<p>[Organization Structure on Environment Analysis]</p> <ul style="list-style-type: none"> There are the laboratories under the Dept. of Crop Inspection & Certification and under the NARO. However, the analytical equipment is not equipped sufficiently. In this reason, analytical samples are usually tested by the outside laboratories by the Directorate of Government Analytical Laboratory (hereinafter referred to as "DGAL") in Ministry of Internal Affairs or laboratory of Uganda National Bureau of Standards. (MAAIF)

Note: () shows the organization which provides opinions and recommendations through the interview.

Source: JICA OD Team (2018)

CHAPTER 2 ORGANIZATIONS, LEGAL AND REGULATIONS FRAMEWORKS ON AGRICULTURAL CHEMICALS

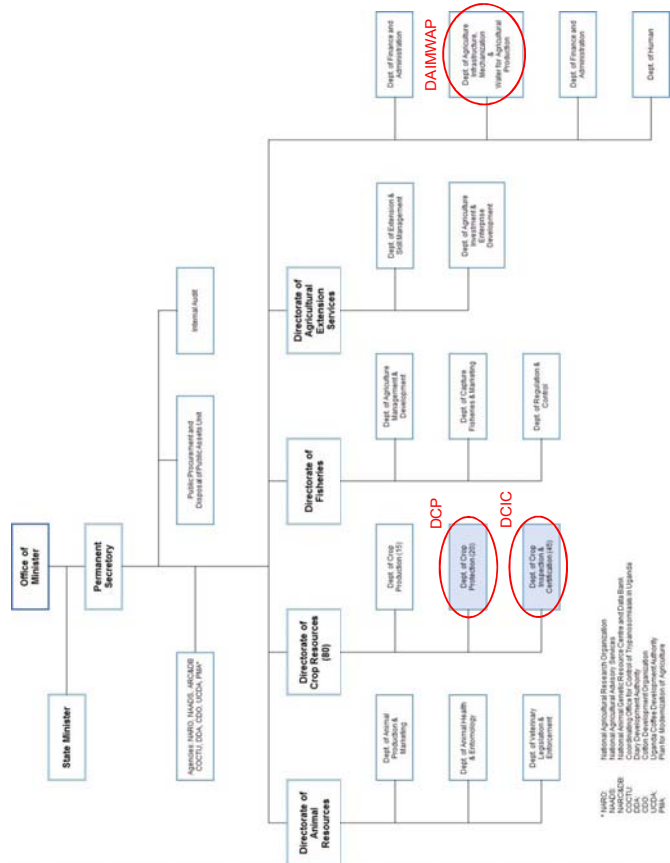
2-1 Organizations Relevant to Agricultural Chemicals in Uganda

There are several administrative agencies concerned for the management of agricultural chemicals in Uganda as follows;

2-1-1 Ministry of Agriculture, Animal Industry and Fisheries

MAAIF is the implementation agency of the Project, and the organization structure is shown in Fig. 2-1-1. Department of Agriculture Infrastructure Mechanization and Water for Agricultural Production (hereinafter referred to as “DAIMWAP”) is assigned as the project implementation unit mainly. On the other hand, Department of Crop Inspection and Certification (hereinafter referred to as “DCIC”) and Department of Crop Protection (hereinafter referred to as “DCP”) under Directorate of Crop Resources are responsible for the management of agricultural chemicals in Uganda. Since the both departments of DCP and DCIP have been as one department by 2013, the staff of both departments work together with exchanging information, knowledge and so on.

Aside from above, there is a research institute for agriculture, which is called as NARO, under MAAIF.



Source: MAAIF (June, 2018)

Fig. 2-1-1. Organization Structure of MAAIF

(1) Department of Crop Inspection and Certification

As of June 2018, there are 45 government officers under DCIC and the department is responsible for formulation of policy, regulations, and standards on agricultural chemicals. In addition, the department is responsible for managing of agricultural chemicals dealers in conformity with the Agricultural Chemicals (Control) Act, 2006. Under this department, there are three divisions as follows;

- Division of National Seed Inspection and Certification:

The division is responsible for the monitoring of seeds on the market level.

- Division of Phytosanitary and Quarantine:

The division is responsible for plant health, controls of pests and diseases for plant, including imports and exports.

- Division of Agricultural Chemicals:

The division works as the secretariat of Agricultural Chemicals Board (hereinafter referred to as “ACB,” and the details are mentioned in below) which regulates agricultural chemicals in Uganda.

(2) Department of Crop Protection

As of June 2018, there are 20 government officers under DCP and the department is divided into two divisions, Division of Pest and Disease Control and Division of Diagnosis and Epidemiology, respectively.

The department is responsible for guidance and awareness creation on weeds, crop pests and diseases to the farmers and follow up. Training and building capacity for the local governments and farming communities in pest and disease epidemic control are also included in their responsibility. The department regularly conducts trainings to the agricultural extension workers as well as the awareness creation through radio program to the farmers, according to the hearing from them.

(3) National Agricultural Research Organization

NARO is a public institution established by “the National Agricultural Research Act, 2005”. The NARO coordinates all agricultural research activities in the national agricultural research system in Uganda. NARO has the national research laboratories for the horticulture, root crops, post-harvest and so on.

2-1-2 National Environment Management Authority

NEMA under Ministry of Water and Environment (hereinafter referred to as “MWE”) is a semi-autonomous institution established in May 1995, based on “the National Environment Act, 1995.” The authority is responsible for coordinating, monitoring, regulating and supervising environmental management in Uganda. In doing this, the authority contributes to socioeconomic development and wise use of natural resources, focusing on providing support to GoU’s main goal of ensuring sustainable development contributing to the National Vision, the National Development Plan (hereinafter referred to as “NDP”), regional and global commitments including the Sustainable Development Goals (hereinafter referred to as “SDGs”).

2-1-3 Agricultural Chemicals Board

ACB was established by the “the Agricultural Chemical Act, 2006” and main functions of the board is to ensure that agricultural chemicals are duly registered and registered chemicals are used in a manner

consistent with the labelling and in conformity with the regulations made under this Act. ACB is in charge of ensuring that agricultural chemicals are properly managed through registration, leveling, issuance of licenses regulating quality and importation.

The Board consists of the chairperson appointed by the Minister of MAAIF and the representatives from the NARO, specific faculties of universities (Agriculture, Science, and Veterinary Medicine) in Uganda, farmers, private sectors of agricultural chemicals, and Uganda National Forestry Authority. In addition, the ex-officio members such as commissioner responsible for crop production, a register from MAAIF, the chairperson of Agricultural Technical Committee, etc. are also involved.

2-1-4 Directorate of Government Analytical Laboratory

DGAL under Ministry of Internal Affairs provides specialized analytical and advisory services to the government agencies and private sector.

DGAL works frequently with MAAIF, ACB and other government agencies in terms of scientific analysis of the test samples. Pesticide analysis is carried out by the pesticide residues division in the laboratory. The capacity of the laboratory is sufficient for testing of environment samples. DGAL has been supported by United States Agency for International Development (hereinafter referred to as "USAID") and other international organization in terms of human resources and analytical equipment through the capacity enhancement from them.

2-2 Legal and Regulatory Frameworks for Agricultural Chemicals in Uganda

The below indicates outline of relevant laws, regulations, and policies for the management of agricultural chemicals in Uganda;

2-2-1 The Constitution of the Republic of Uganda, 1995

The Constitution stipulates that the GoU shall protect important natural resources including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Uganda, and promote suitable development and public awareness of the need to manage land, air, water resources, in a balanced and suitable manner for the present and future generation. In addition, GoU is also required to take all possible measures to prevent or minimize damage and destruction to land, air and water resources due to pollution, degradation and other cases, under the Constitution.

Paragraph 27 on the environment states that the GoU shall promote sustainable development and public awareness of the need to manage land, air, water resources in a balanced and sustainable manner for the present and future generation. Additionally, the GoU is also required to take all possible measures to prevent or minimize damage and destruction to land, air, and water resources due to pollution, degradation and other causes.

In "Article 17. Duties of citizens," people of Uganda has to create and protect a clean and healthy environment. On the other hand, the Constitution also states that people of Uganda has a right to a clean and healthy environment in "Article 39 Right to a clean and healthy environment." In short, people of Uganda has not only responsibilities, but also rights on the environment under the Constitution. Moreover, "Article 245 Protection and preservation of the environment" stipulates that parliament shall by law provide measures intended to protect and preserve the environment from abuse, pollution and degradation and to manage the environment for sustainable development. These constitutional provisions provide the basis for legal and policy action on pesticides management in Uganda.

2-2-2 The National Environment Act, 1995

The Act provides sustainable management of the environment; to establish an authority as a coordinating, monitoring and supervisory body for that purpose; and for other matters incidental to or connected with the foregoing. In this context, it is recognized that the Act is the most significant law on the environment and the usage of chemicals.

The Act also provides for Environmental Impact Assessment and Audits for projects seemingly to have a negative impact on the environment with below regulations;

- The Environmental Impact Assessment Regulations, 1999; and
- The National Environment (Audit) Regulations, 2006.

Regarding environmental standards, following regulations are provided under the Act;

(1) The National Environment (Waste Management) Regulations, 1999

The Regulations expound on management of hazardous wastes and hazardous characteristics, while the specific standards are regulated by the following National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999.

(2) The National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999

In accordance with Section of "the National Environment Act, 1995," "the National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 1999" are prescribed and the Regulations provide standards for effluent and waste discharge.

2-2-3 The Water Act, 1997

Section 5 of the Act vests all rights to investigate, control, protect and manage water in the GoU. Regarding pollution, Section 31 prohibits discharging directly or indirectly into water without authorized under the Act. The specific regulations under the Act are as follows;

(1) The Water (Water Resources) Regulations, 1998

Regarding usage of surface water in irrigation purpose, the developer is required to apply the Surface Water Permit in accordance with Form A (Part D) of First Schedule in the Act.

(2) The Water (Waste Discharge) Regulations, 1998

The Regulations stipulates the standards for treated effluent or waste before discharge into waste or on land is as established by the NEMA in consultation with the lead agency under Section 26 of "the National Environment Act, 1995." As mentioned above, the standards are provided by the National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999.

2-2-4 The Agricultural Chemicals (Control) Act, 2006

The Act controls and regulates the manufacture, storage, distribution and trade in, use, importation and exportation of agricultural chemicals and for other related matters, and the responsible ministry of this act is MAAIF. Under Section 3 and 4 of the Act, the requirement of packaging, labelling or advertisement of agricultural chemicals is relevant in pesticides management to prevent illegal activities related to mislabeling and mis-packaging. As mentioned above, while there is no agricultural chemicals manufactured or formulated in Uganda, more than 500 imported agricultural chemicals are registered

by the list in accordance with the Act. In Section 5 and 6, the Act also states the establishment of ACB and functions of the board.

2-3 International Policies

2-3-1 Stockholm Convention

“Stockholm Convention on Persistent Organic Pollutants (hereinafter referred to as “Stockholm Convention”) was adopted on 17th February 2004, and came into force on 17th May 2004. Uganda accepted the convention in 2004.

The purpose is to emphasize for protection of human health and conservation of the environment from negative impacts of Persistent Organic Pollutants (hereinafter referred to as “POPs”) with attention to the preventive approach which is described in Principle 15 of Rio Declaration on Environment and Development. The parties of the convention are required to take measures to eliminate/ restrict the production and use of the chemicals listed under Annex A/ B, or reduce unintentional production the unintentional releases of chemicals listed under Annex C with the goal of continuing minimization and, where feasible, ultimate elimination.

2-3-2 Basal Convention

“Basel Convention on Controlling Transboundary Movements of Hazardous Wastes and their Disposal (hereinafter referred to as “Basal Convention”)” was adopted on 22nd March 1989, and came into force on 5th May 1992. Uganda accepted the convention in 1999.

The purpose is to protection of human health and the environment from risks caused by wastes through international framework on regulations of cross-border transportation and disposal of hazardous and other wastes.

2-3-3 Rotterdam Convention

“Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (hereinafter referred to as “Rotterdam Convention”)” was adopted on 11th September 1998, and came into force on 24th February 2004.

The purpose is to establish the procedure of exports among signatories of the convention to avoid immoderate exports of harmful chemicals and expellant, which are prohibited or limited use strictly in developed countries, to developing countries. The secretariats are the United Nations Environment Programme (hereinafter referred to as “UNEP”) and Food and Agriculture Organization. As of September 2018, thirty nine (39) chemicals is subject to the convention. When a party agrees to import these chemicals, the convention promotes their safe use through labelling standards, technical assistance, and other forms of support, and ensures that exporters comply with the requirements.

2-4 Relevant Projects to be referred

2-4-1 Agriculture Cluster Development Project

ACDP financed by WB, has started since November 2017. Duration of the project is 6 years, and the main purpose of ACDP is to increase productivity, production, and commercialization of selected agricultural commodities, such as maize, beans, rice, cassava and coffee, in specified clusters of districts.

It is expected that the ACDP will raise farmers’ and agribusiness incomes while substantially lowering transactions costs in markets for agricultural commodities. The ACDP will be implemented in 35 districts in Uganda, while the Project Sites such as districts of Bulambuli nor Kween are not included.

According to the Environmental Specialist of MAAIF dispatched by WB, the specific components under ACDP are planned as follows;

Component 1: Enhancement of Agriculture through Finance Support to Farmer’s Group

- ACDP supports farmers financially for purchasing agricultural inputs through registered farmers’ group.
- The distribution way for above is E-voucher system. ACDP provides necessary tools of E-voucher system to the registered dealers and the farmer’s groups purchase agricultural inputs by E-voucher.

Component 2: Consolidation of Access to the Markets

- ACDP supports farmers through improvement of farmers’ access to the markets for increasing productivity.
- ACDP rehabilitates 1,700 km of farm to market roads for smooth transportation of agricultural products.
- ACDP funds to the rural producer’s groups, farmer’s groups, and agricultural commodity cooperative enterprises for purchasing the processing and storage equipment.

Component 3: Development of Policy and Regulatory Function of MAAIF

- ACDP supports MAAIF’s regulatory capacity for the monitoring of the products quality.

Component 4: Irrigation Development

- Feasibility studies and engineering design of four irrigation schemes in the districts of Amuru, Nwoya, Iganga, and Bugiri are conducted. Information and Communication Technologies (ICT) of irrigation facilities are included in the component.

As mentioned above, ACDP supports farmers groups in terms of agricultural input through E-voucher system. The trainings of agricultural chemicals are implemented by the project. Trainings on safe use of agricultural chemicals to government officers and farmer’s groups registered of pilot area have been conducted.

ACDP prepared the Pest Management Plan (PMP) of the project separately from the Environmental and Social Management Framework (ESMF) for the enhancement of the Integrated Pest Management (hereinafter as referred to “IPM”) within Uganda. As of September 2018, ACDP is at the initial stage since the project has just started in the last year. However, the lesson learns form ACDP as listed below are referred to the Agricultural Chemicals Management Plan (ACMP) in Atari Area;

- Although the use of agricultural chemicals is harmful for users, most of farmers does not wear protective tools, such as masks, gloves and so on. The ACDP conducted pilot trainings on safety measures in the districts of the project.
- Farmers does not know how to dispose agricultural chemical containers properly. Awareness creation for the handling of agricultural chemical containers is necessary since some of farmers reuse containers as for keeping seasoener, drinking water, etc.
- In Uganda, information related to the use of agricultural chemicals is insufficient and the safety use of agricultural chemicals is not monitored well.

2-4-2 Promotion of Rice Development Project

Since November 2011, JICA is currently conducting the PRiDe as a technical cooperation project in Uganda. The progress of the project is at the Phase I, as of September 2018, and the Phase II will be commenced soon.

The objective of PRiDe is to increase agricultural income of farmers through capacity enhancement on analysis of institutions regarding rice production in Uganda, and improvement of quality. The target areas are 40 districts and beneficial farmers' are estimated as approximately 40,000. In addition, about 400 specialists on rice farming and service providers are encouraged by PRiDe.

As the result of Phase I, the rice cultivation practices and knowledges have been introduced to the number of around 850 trainers, which are the agricultural officers and the assistant agricultural officers of the district and sub-county, and 5,000 farmers. The rice cultivation area was expanded and rice productivity was increased as the result of Phase I activity.

The "Rice Cultivation Handbook" was prepared and distributed to the trainers and farmers through the trainings conducted during Phase I. In this handbook, utilization of the chemical fertilizers, Urea and DAP (Diammonium Phosphate), is guided. On the other hand, the trainings on the pesticide use have not been conducted yet. According to the Japanese Expert of PRiDe, it will be planned to conduct the trainings on pesticide use by PRiDe because the training needs are high based on the requests from farmers.

CHAPTER 3 OUTLINE OF THE ENVIRONMENTAL IMPACTS ON AGRICULTURAL CHEMICALS USE

3-1 Type of Agricultural Chemicals

"The Agricultural Chemicals (Control) Act, 2006" in Uganda stipulates that "Agricultural Chemicals" includes insecticides, fungicides, insecticide- fungicide combinations, herbicides, rodenticides, nematocide, antibiotics, plant growth regulators, fertilizers, etc. The purpose of agricultural chemicals are mainly 1) crop protection from damages by pests, weeds, rats, etc., 2) increasing yields, 3) quality control, and 4) supplementation of nutrition elements.

Table 3-1-1. Characteristics of Agricultural Chemicals

Item	Characteristics
Insecticide	It is used for extermination of pests.
Fungicide	It is used for extermination of diseases.
Insecticide - fungicide combination	It is produced by mixing insecticide and fungicide, and can simultaneously exterminate pests and diseases.
Herbicide	It is used for extermination of weeds.
Rodenticide	It is used for extermination of rats, etc.
Plant growth regulators	It is used for acceleration and/ or inhibition of plant growth.
Attractant	It is mainly used to attractant pests by its smells.
Spreading agent	It is used to enhance adherability of other pesticides.
Predator	It is used to control pests by using predator of pests.
Microbiologic agent	It is used to control pests and diseases by using microbes.
Organic fertilizer	It is made from substance derived from flora and fauna, and has types of delayed effectivity and delayed release.
Mineral fertilizer	It is scientifically elaborated and has types of immediate effectivity and delayed release.
Organic - mineral combination fertilizer	It is produced by mixing Organic fertilizer with Mineral fertilizer.

Source: "General Information of Agricultural Chemicals (2017, Japan Plant Protection Association)"

3-2 Accessibility of Agricultural Chemicals

In conformity with the Agricultural Chemicals (Control) Act, 2006 in Uganda, more than 500 agricultural chemicals products are registered to import, export, and sale by the list, as of 26th June 2018 (see, Attachment). There is no agricultural chemicals manufactured or formulated in Uganda⁵. The main suppliers of imported pesticides are coming from India, China, Taiwan, Israel, Europe countries, United States of America (hereinafter referred to as "USA"), or branch offices of international companies in Kenya. Based on the Section 4 of the above Act, no person is not allowed to import into or sell in Uganda any agricultural chemicals unless that it has been registered, packed and labelled in accordance with regulations.

3-3 Risks of Agricultural Chemicals

3-3-1 Potential Risks of Pesticide Use

The pesticides spraying in the farm field firstly drop to the soil surface and most of those are decomposed and disappeared. However, there is still a risk the remained pesticides in the long period on the soil surface may flow into water system by rains, etc. In case of using pesticides in the rice field, it is

⁵ Environmental and Social Management Framework – Pest Management Plan and Climate Change Risk Analysis and GHG, Regional Eastern and Central Africa Agricultural Transformation Project (May, 2018)

CHAPTER 4 AGRICULTURAL CHEMICAL MANAGEMENT PLAN in ATARI AREA

The scope of the Project is limited to irrigation facilities development and does not include the promotion of the use of agricultural chemicals since it is assumed that the existing cultivation practices (non-pesticide use, reduced pesticide use) will continue in the area.

Accordingly, it is assumed that the use of agricultural chemicals will be not actively increased by implementation of the Project, and based on this recognition, the ACMP is formulated with the core activities for sensitization and dissemination to the farmers and the extension officers on the farming practices for minimization of environmental impacts.

The following criteria apply to the selection and use of agricultural chemicals for ACMP;

- They must have negligible adverse human health effects.
- They must be shown to be effective against the target species.
- They must have minimal effect on non-target species and the natural environment. The methods, timing, and frequency of pesticide application are aimed to minimize damage to natural enemies.
- Their use must take into account the need to prevent the development of resistance in pests.

There is a registration system for agricultural chemicals by ACB in Uganda. Technical expert of the agricultural chemicals will confirm with ACB that the pesticides including class IA, IB and II listed up by WHO guideline⁶ are approved or not for use in the ACB during the detail design survey stage. If there are such pesticides, training for proper storage, handling and use of agricultural chemicals will be conducted to the farmers and extension officers and sensitization will be conducted for prevention of misuse by farmers without proper knowledge.

4-1 Anticipated Negative Impacts of the Natural and Social Environment

Anticipated negative impacts of the natural and social environment concerning on the use of agricultural chemicals are shown in table 4-1-1.

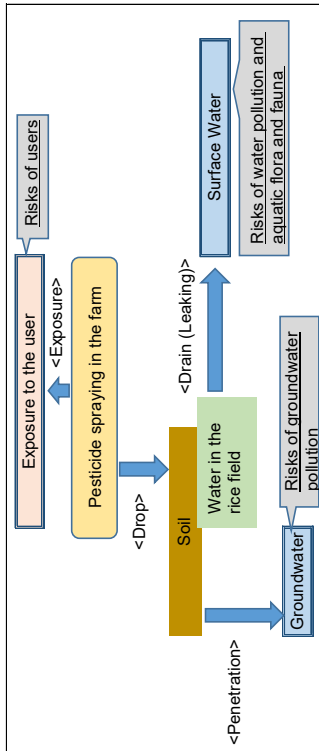
Table 4-1-1. Anticipated Negative Impacts of the Social and Natural Environment on the use of Agricultural Chemicals in Atari Area

Anticipated Impacts of the Environment	
Items	
1. Natural Environment	(Operation Phase)
a) Surface Water	<ul style="list-style-type: none"> There is a possibility of the leaking of residual pesticides by the drain from rice field. Exceeded inputs of the chemical fertilizers may affect to the water pollution in terms of nutrients (Nitrogen and Phosphorus) in the surface water by the drain from rice field.
b) Groundwater	(Operation Phase) <ul style="list-style-type: none"> There is a possibility of the penetration of residual pesticides to the groundwater. Exceeded inputs of the chemical fertilizers may affect to the water pollution in terms of Nitrate (NO₃) and Nitrite (NO₂) in the groundwater.
c) Ecosystem	(Operation Phase) <p>If in case the residual pesticides exist in the downstream, it may affect adverse impacts to the aquatic flora and fauna.</p>
2. Social Environment	(Operation Phase)
a) Work Environment	During the spraying of pesticides, incorrect use of pesticides leads to hazardous risk for users and neighbors.

Source: JICA OD Team (2018)

necessary to be careful of drain since the drain water may contain remained pesticides. Pesticides leaking in the surface water may affect to the aquatic flora and fauna in the downstream.

When the farmer sprays pesticides in the farm field, there is a risk of exposure for users by touching or inhalation of sprayed pesticides.



Source: JICA OD Team (2018)

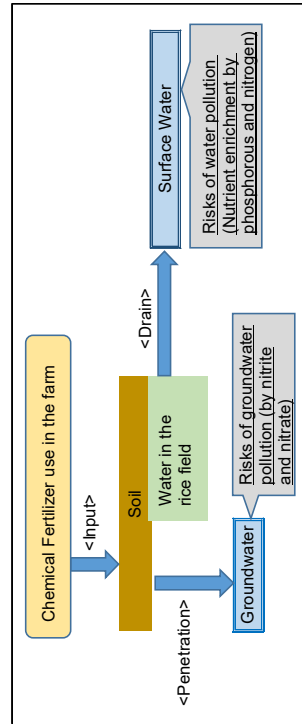
Fig. 3-3-1. Risks of the Pesticides Use in the Environment

3-3-2 Potential Risks of the Fertilizer Use

Excess chemical fertilizers not being absorbed by the agricultural crops flow into the surface water by the drain from rice field and penetrate into the groundwater. Nitrogen (N) and phosphorus (P) compounds in the surface water are the one of substances being caused of the nutrient enrichment in the surface water.

Nitrogen (N) compounds in the soil are decomposed to the nitrite (NO₂) compounds and nitrate (NO₃) compounds by the microorganism mechanism with the passage of time and finally reach to the groundwater. The groundwater with high dissolved concentration of nitrite (NO₂) and nitrate (NO₃) is difficult to use for drinking water because the risk of waterborne diseases (methemoglobinemia diseases) for baby is indicated.

On the other hand, these compounds (N and P) are already contained in the irrigation water and the agricultural crop usually absorbs such nutrients from them, especially in case of the rice field. Hence, significant pollution is not expected as far as normal fertilizer usage by small farmer consumption basis.



Source: JICA OD Team (2018)

Fig. 3-3-2. Risks of the Fertilizers Use in the Environment

4-2 Principles on Mitigation Measures

Proposed mitigation measures are planned as the practical farming practices which can be applied to farmers in Atari Area for minimization of environmental impacts with considering the idea of the IPM.

4-2-1 Promotion of the Eco-friendly Farming Practice

(1) Proper Water Management during Pesticide Use

Pesticide concentration of the water in the rice field keeps being high during several days after spraying pesticides. Proper water management is necessary for preventing pesticide containing water leakage to the surface water until most of the pesticide compounds are being stable on the soil surface.

Otherwise, discharging of water containing pesticide elements will have a negative effect on the water environment in and around the Atari area. To be concrete, setting the water stoppage period and complying the period is one of effective method to keep the water containing pesticide elements during a certain period in the rice field. In addition, the levees should be arranged properly for keeping water in the rice field and preventing leaking water. Knowledge of the proper water management during pesticide use is enlightened to the farmers in Atari Area.

The detailed methods of proper water management in the rice field are shown in Table 4-2-1.

Table 4-2-1. Proper Water Management during Pesticide Use

Items	Explanations
Water stoppage period during water stoppage period	Setting the water stoppage period after pesticide use (one week) Do not discharge water from rice field during the water stoppage period (Prohibition of the continuous water discharge or water removal from the rice field)
Levee and ridge arrangement	Proper levee arrangement is necessary for prevention of leakage from rice field and improving pesticide effect.

Source of Illustrations and Pictures: Japan Crop Protection Association
Source: JICA OD Team (2018)

(2) Compost Use for Farming

Compost fertilizers are made by the animal wastes and agricultural residues generating in Atari Area. Utilization of compost fertilizers are effective on the reduction of use frequency of chemical fertilizers as well as effective on the soil productivity being improved.

As the side effect of compost fertilizer use, it is expected to improve water quality of the irrigation and drainage canals since the compost making contributes to reduce throwing of organic matters into canal by utilization of excess animal wastes and agricultural residues in the area, effectively. Knowledge of the compost making is sensitized to the farmers in Atari Area.

Table 4-2-2. Utilization of Compost Fertilizers for Reducing Agricultural Chemicals Usage

Item	Explanations
Utilization of compost fertilizers	<ul style="list-style-type: none"> Utilization of animal wastes and agricultural residues generating in the area as the compost fertilizers Mix use of compost fertilizers and chemical fertilizers to prevent the excess usage of the chemical fertilizers.
[An example of know-how for Compost Making]	

Source of Illustrations: Ministry of Agriculture, Forestry and Fisheries, Japan
Source: JICA OD Team (2018)

(3) Creating a Farm Field Environment for Less Pest Generation

As one of the practical ways of the crop protection measures without pesticides use, the cultural practices are effective for creating a farm field environment for less pest generation. Such cultural practices which can be conducted by farmers are introduced and sensitized to the farmers in Atari Area.

Table 4-2-3. Cultural Practices for Creating a Farm Field Environment for Less Pest Generation

Items	Explanations
Puddling	Puddling rice field equally and carefully.
Seed selection	Selection of the resistant seed species.
Seed disinfection	Conducting hot water disinfection.
Pest Prevention	Removing seed plants after transplanting immediately for prevention of the leaf stripe diseases generation. Removing weeds in the wet land area frequently for prevention of the insect generation.
Crop Rotation	Conducting crop rotation which is effective to reduce pest generation. Cleaning and removing of weeds in the levees, roads and idle farmlands. Cultivating and mixing of soil after harvesting for prevention of perennial weed generation. Physical weed removal by hand or using paper multi-transplant.
Weed control of the rice field and neighboring area	
Bird Scaring	Putting the build scares to keep birds off in rice field and bird repellents are not used.

Source of Pictures: Agricultural Department, Toyama Prefecture, Japan
Source: JICA OD Team (2018)

4-2-2 Promotion of the Proper Application and Safety Use of Agricultural Chemicals

(1) Proper Application of Pesticides

Proper application of pesticides is necessary for preventing exceeded pesticide usage in Atari Area. Proper knowledge for using pesticides such as type of pesticides, applicable crops, recording, etc. are sensitized to the farmers in Atari Area.

Table 4-2-4. Consideration on Proper Application of Pesticides

Items	Explanations
Type of pesticides	To use resisted pesticides in Uganda.
Method of application	To understand the purpose, applicable crops, use amount, dilution concentration and frequency of use. To understand how to use record book for managing pesticide usage.
Recording	[Examples to be recorded] Date of use, place of use, applied crops, type and name of pesticides, amount and dilution concentration of pesticides.
Attentions	<ul style="list-style-type: none"> To confirm the label of pesticide containers for understanding the applicable crops, amount and dilution concentration, use season and frequency before using pesticides. To confirm the use times by checking of label and record book before using pesticides.
Prohibited matters	<ul style="list-style-type: none"> Do not use for inapplicable crops. Do not use beyond the indicated amount of use and concentration of use. Do not use inapplicable time of use (e.g. Indicated number of days before harvesting). Do not use beyond the indicated total number of uses.


Source of Pictures: JICA Promotion of Rice Development (PRiDe) Project

Source: JICA OD Team (2018)

(2) Safety Use of Pesticides

Safety use of pesticides is important for preventing hazardous risk of users and neighbors. Proper handling including storage and disposal of the pesticides are also important to prevent leaking of disposal pesticides to the environment. Proper knowledge for safety use and proper handling of pesticides are sensitized to the farmers in Atari Area.

Table 4-2-5. Considerations on Safety use, Storage and Disposal of Pesticides

Items	Explanations
Understanding of the explanation of label on containers	<ul style="list-style-type: none"> To confirm and understand the explanation of label on pesticide containers completely. To confirm using pesticide is registered. To confirm using pesticide is not expired.
Storage and disposal	<ul style="list-style-type: none"> To keep the pesticide container in the storage with key locked. To keep the pesticide liquid in original container (do not transfer pesticide liquid to other container for prevention of incorrect use). To finish the pesticide liquid completely (do not leave pesticide liquid in the container and do not dispose to drain). To wash empty container carefully before disposal. To use washed water as the dilution water of the pesticide preparation. <p>Procedure of the washing and disposal of pesticide containers</p> 

Items	Explanations
Protective tools	To use the protective mask, clothes and gloves.
Consideration on spraying work of pesticides	<p>(a) Time zone of the pesticide spraying Pesticide spraying should be done during morning or evening (avoiding daytime). In the morning, sprayed pesticides are easy to fall down with the downdrafts while in the daytime, sprayed pesticides fly up in the sky with the updrafts. In the rainy day, pesticide spraying should not be done.</p> <p>(b) Work hours Pesticide spraying work requires physical strength. Time of work must be within two hours and take rest frequently.</p> <p>(c) Eating and drinking during spraying Eating, drinking and smoking during spraying work should be avoided because it is dangerous for health.</p> <p>(d) Exercises not taking pesticide It is important to avoid exposure of the pesticide fogs as much as possible during pesticide spraying work. Pesticide should not be sprayed with walking forward because sprayed pesticide is being drifted. Pesticide should be sprayed with walking backward for minimization of exposures.</p> <p>(e) After the pesticide spraying work Remained pesticide liquid should be kept with sealed container and the original label should be attached on container.</p> <ul style="list-style-type: none"> Washing hands and mouth, etc., carefully after spraying work for health. If user feels any abnormality in the body, get a doctor's diagnosis immediately with bringing the pesticide container.
Consideration on preventing of the drift hazard of the pesticide	<ul style="list-style-type: none"> To notice to the neighbor farmers in advance about the purpose, date, time, and type of pesticides. To coordinate with neighbor farmers closely about the timing of harvesting and timing of pesticide spraying. To secure buffer area for non-spraying To take care of the wind strength and direction. In the day of strong wind, pesticide spraying should not be done. To use proper nozzles for pesticide spraying.

Source of Illustrations: Kyoto Prefecture Web Site, Japan

Source: JICA OD Team (2018)

4-2-3 Role of Concerning Organizations

It is proposed that the role of the concerning organization related to the implementation of the mitigation measures are shown as follows;

(1) Central Level Concerning Organization

a) Department of Agriculture Infrastructure Mechanization and Water for Agricultural Production

As the main implementation unit of the Project, DAMWAP is in charge of coordinating concerned organizations and arranging activities.

b) Department of Crop Protection

DCP is currently responsible for guidance and awareness creation on weeds, crop pests and diseases to the farmers and follow up. With respect to the function of department, DCP is suitable position being in charge of the overall management for implementing the mitigation measures. DCP will evaluate the plan of mitigation measures technically and implement trainings to the district level concerning persons with the DD/SV consultant.

During the operation phase, DCP supports agricultural extension officers' training activity for farmers in Atari Area through the coordination of Crop Production Department in District.

Coordination with the related organization, such as the NARO, local NGOs, etc., will be also the responsibility of DCP, if necessary.

c) Department of Crop Inspection & Certification

DCIC is currently responsible for formulation of policy, regulations, and standards on agricultural chemicals. Division of Agricultural Chemicals under this department works as the secretariat of ACB which controls the registration of Agricultural Chemicals in Uganda. With respect to the function of department, DCIC will be involved as the position of giving technical advice in terms of the application and selection of proper agricultural chemicals.

(2) District Level Concerning Organizations

a) Department of Crop Production in District

Department of Crop Production is responsible for managing the activities of Agricultural Officers (hereinafter referred to as “AOs”) and Assistant Agricultural Officers (hereinafter referred to as “AAOs”). The Department of Crop Production in District will be involved as the trainers of farmers with AO and AAOs.

b) Agricultural Extension Officers

MAAIF has the extension system of farmers by AOs and AAOs. They have some knowledge regarding safe use of agricultural chemicals through the regularly trainings by the DCP based on the hearing from them.

With respect to their roles, AOs and AAOs will be in charge of the trainers of farmers in the system of existing agricultural extension service.

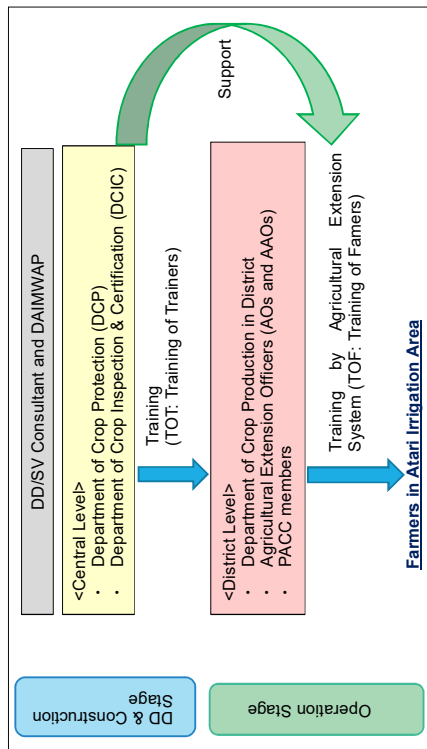
c) Project Area Coordination Committee

There are farmers’ committees called as the “Project Area Coordination Committee (PACC)” which is organized by the farmers in Atari Area. The members of PACC will be involved as the trainers of farmers with AOs and AAOs.

4-3 Mitigation Measures

4-3-1 Training Plan

As shown in the Fig. 4-3-1, the DD/ SV consultant will conduct trainings together with the DCP and DCIC to the persons in charge of the district level. Persons in charge of the district level will continue the training to the farmers by the existing agricultural extension system. DCP will support technically during such trainings by the agricultural extension system. Proposed training plan for the mitigation measures for Atari Area is shown in Table 4-3-1.



Source: JICA OD Team (2018)

Fig. 4-3-1. Concept of the Training Plan

Table 4-3-1. Training Plan of the Mitigation Measures for Atari Area

Duration	Activities	Implementers	Estimated Days
Detail Design Stage	Preparation of training materials	• DD/ SV Consultant and DAIMWAP	3 days
Construction Stage	Implementation of the two times trainings to the district level concerning persons in Bulambuli District and Kween District: (Method) <ul style="list-style-type: none"> • Class room lectures (1 day) • Field exercises (2 days) (Contents) <ul style="list-style-type: none"> • Promotion of the Eco-friendly Farming Practice • Proper Application and Safety Use of Agricultural Chemicals Training Program of Class Room Lectures (1 day) (Draft) <ol style="list-style-type: none"> Day1 am <ul style="list-style-type: none"> • Theme-1: Water management in the rice field during the period of pesticide use • Training contents are: <ol style="list-style-type: none"> 1) Reasons of proper water management is needed in the rice field 2) Methods to manage the water in the rice field during the period of pesticide use 3) Days to keep the irrigation water in the rice field 	• DD/ SV Consultant and DAIMWAP • DCP • DCIC	6 days (3 days in each district)

Duration	Activities	Implementers	Estimated Days
	<p>after pesticide spraying</p> <ul style="list-style-type: none"> Theme-2: Compost Use to reduce the frequency of chemical fertilizers Training contents are: <ol style="list-style-type: none"> Effects of compost How to make the compost Mix use of compost and chemical fertilizer <p>Day1 pm</p> <ul style="list-style-type: none"> Theme-3: Creation of the farm field environment for less pest generation Training contents are: <ol style="list-style-type: none"> Effects of creation of the farm field environment Methods for creation of the farm field environment <p>Day 1 pm</p> <ul style="list-style-type: none"> Theme-4: Proper application and safety use of agricultural chemicals Training contents are: <ol style="list-style-type: none"> Type of pesticide, applicable crop, record keeping, etc. Methods of application of pesticide Methods of safety use of pesticide <p>Training Program of Field Exercises (2 days) (Draft)</p> <p>Day1 am</p> <ul style="list-style-type: none"> Theme-1: Water management in the rice field during the period of pesticide use Training contents are: <ol style="list-style-type: none"> Practice to manage the water in the rice field during the period of pesticide use by using stop logs Practice to arrange the levee and ridge <p>Day1 pm</p> <ul style="list-style-type: none"> Theme-2: Compost Use to reduce the frequency of chemical fertilizers Training contents are: <ol style="list-style-type: none"> Practice of compost making Practice of mixed use of compost and agricultural chemicals <p>Day2 am</p> <ul style="list-style-type: none"> Theme-3: Creation of the farm field environment for less pest generation Training contents are: <ol style="list-style-type: none"> Practice of creation of the farm field environment such as puddling, seed selection, crop rotation, Bird scaring, etc <p>Day2 pm</p> <ul style="list-style-type: none"> Theme-4: Proper application and safety use of agricultural chemicals Training contents are: <ol style="list-style-type: none"> Practice of pesticide application Practice of safety use of pesticide <p>(Timing)</p> <p>1 time before completion of irrigation facilities construction in each district</p>		

Duration	Activities	Implementers	Estimated Days
Operation Stage ^{*1}	<p>Training of farmers by the agricultural extension system: (Contents)</p> <ul style="list-style-type: none"> Same contents as the training on construction stage 	<p>District level concerning person (20 numbers) in each district:</p> <ul style="list-style-type: none"> Department of Crop Production in District (3) AOs and AAOs (2) PACC members (15) 	As necessary

*1: Trainings after handing over of the facilities will be conducted by the existing agricultural extension system.
Source: JICA OD Team (2018)

4-3-2 Monitoring Plan

Water quality monitoring of the surface water and groundwater is planned as a part of the environmental monitoring for the impact of agricultural chemicals use in Atari Area.

(1) Monitoring of Surface Water

a) Pesticides (Surface Water)

The "Water (Waste Discharge) Regulations, 1998 under the Water Act. Cap 152" in Uganda regulates the type of pesticides which is required for waste discharge permit in the water environment, although the allowable maximum limit is not shown in the regulation. On the other hand, the pesticides regulated by the Japanese environmental standard are not adapted with those regulated by above Ugandan regulation in terms of the type of pesticides.

In this reason, the environmental water quality standard for pesticides of European Union (hereinafter referred to as "EU") is chosen as the international standard to be referred. The water quality monitoring standard and monitoring frequency for the impact of pesticide use on surface water in Atari Area are shown in Table 4-3-2.

Table 4-3-2. Monitoring Plan of Surface Water (For Pesticides Use)

No.	Item	Unit	International Standard ^{*1} (EU)	Monitoring Plan	
				Standard for the Project	Frequency
1	Aldrin	(µg/l)	0.01	0.01	2 times/year (1 time x 2 farm season)
2	Atrazine	(µg/l)	2.0	2.0	
3	DDT	(µg/l)	0.025	0.025	
4	Endsulfan	(µg/l)	0.01	0.01	
5	Endrin	(µg/l)	0.01	0.01	
6	Simaxine	(µg/l)	4	4	
7	Trifluralin	(µg/l)	0.03	0.03	
[Implementer] During construction: Contractor, During operation: MAAIF					
[Responsibility] During construction: MAAIF, During Operation: MAAIF					
[Sampling place] 3 points (Upstream of Headworks, Confluence point of drainage canal and Atari River, Downstream of confluence point)					
[Measurement method] Laboratory Analysis					

*1: Environmental Quality Standard for Substances and Certain Other Pollutants, EU
Source: JICA OD Team (2018)

b) Fertilizers (Surface Water)

The "Standards for Discharge of Effluent into Water or Land, 1999 under the National Environment Act.

Cap 153” in Uganda regulates the effluent water quality from the establishments such as the wastewater treatment plant. The effluent water quality standard regulates the pollutant effluent from the establishment into surface water, but does not indicate the desirable water quality of the surface water (river) itself. So that, the effluent water quality standard is not suitable to apply as the monitoring standard on the surface water (river) quality for the impact of fertilizer use.

In this reason, the Japanese environmental standard on river is chosen as the international standard to be referred as the monitoring water quality standard of the surface water. However, the existing water quality of the Atari River is already exceeded in terms of some parameters than the indicators of Japanese environmental standard. Due to these circumstances, the baseline data (the existing water quality of the Atari River) is chosen as the water quality monitoring standard. The water quality monitoring standard and monitoring frequency are shown in Table 4-3-3.

Table 4-3-3. Monitoring Plan of Surface Water (For Fertilizers Use)

No.	Item	Unit	Atari River water quality in F/S Survey ^{*1}		International Standard ^{*2} (Japan)	Standard for the Project	Monitoring Plan Frequency
			Dry season	Wet season			
1	pH	-	-	-	6.5 – 8.5	6.5 – 8.5	Every month 2 times/year (1 time x 2 farm season)
2	DO	(mg/l)	4.7	5.9	above 5.0	above 4.7	
3	BOD	(mg/l)	3.6	14.0	5.0	14.0	
4	T-N	(mg/l)	11.3	0.96	0.4	11.3	
5	T-P	(mg/l)	1.0	0.23	0.03	1.0	

【Implementer】 During construction: Contractor, During operation: MAAIF
【Responsibility】 During construction: MAAIF, During Operation: MAAIF
【Sampling place】 3 points (Upstream of Headworks, Confluence point of drainage canal and Atari River, Downstream of confluence point)
【Measurement method】 Laboratory Analysis

*1: Average of actual measurement in upstream, midstream and downstream of Atari River (Table 1.1.15, P.1-33, ANNEX III-8, F/S Report)

*2: Category C, environmental standards relating to the protection of the living environment on river in Japan (pH, DO, BOD) and same standards on pond (T-N, T-P)
Source: JICA OD Team (2018)

(2) Monitoring of Groundwater

a) Pesticides (Groundwater)

Monitoring items for the pesticide of groundwater are adapted same items of the surface water since the water quality standard is not exist. Baseline data (existing water quality) will be measured during the Detail Design survey. The water quality monitoring standard and monitoring frequency for the impact of pesticide use on groundwater in Atari Area are shown in Table 4-3-4.

Table 4-3-4. Monitoring Plan of Groundwater (For Pesticide Use)

No.	Item	Unit	Baseline data	International Standard ^{*1} (EU) (Same as surface water)	Monitoring Plan	
					Standard for the Project	Frequency
1	Aldrin	(µg/l)	To be measured by Detail Design Survey	0.01	0.01	2 times/year (1 time x 2 farm season)
2	Atrazine	(µg/l)		2.0	2.0	
3	DDT	(µg/l)		0.025	0.025	
4	Endosulfan	(µg/l)		0.01	0.01	
5	Endrin	(µg/l)		0.01	0.01	
6	Simaxine	(µg/l)		4	4	
7	Trifluralin	(µg/l)		0.03	0.03	

【Implementer】 During construction: Contractor, During operation: MAAIF
【Responsibility】 During construction: MAAIF, During Operation: MAAIF
【Sampling place】 2 boreholes in Atari Area
【Measurement method】 Laboratory Analysis

*1: Environmental Quality Standard for Substances And Certain Other Pollutants, European Union
Source: JICA OD Team (2018)

b) Fertilizers (Groundwater)

In the same reason as the case of surface water, the Japanese environmental standard is chosen as the international standard to be referred. In case of the groundwater, Japanese environmental standard on groundwater is applied. Baseline data (existing water quality) will be measured during the Detail Design survey.

The water quality monitoring standard and monitoring frequency for the impact of fertilizer use on groundwater are shown in Table 4-3-5.

Table 4-3-5. Monitoring Plan of Groundwater (For Fertilizers Use)

No.	Item	Unit	Baseline data	International Standard ^{*1} (Japan)	Monitoring Plan	
					Standard for the Project	Frequency
1	NO ₃ -N Nitrogen	(mg/l)	To be measured by Detail Design Survey	10.0 ^{*2}	10.0	2 times/year (1 time x 2 farm season)
2	NO ₂ -N (Nitrite Nitrogen)	(mg/l)				

【Implementer】 During construction: Contractor, During operation: MAAIF
【Responsibility】 During construction: MAAIF, During Operation: MAAIF
【Sampling place】 2 boreholes in Atari Area
【Measurement method】 Laboratory Analysis

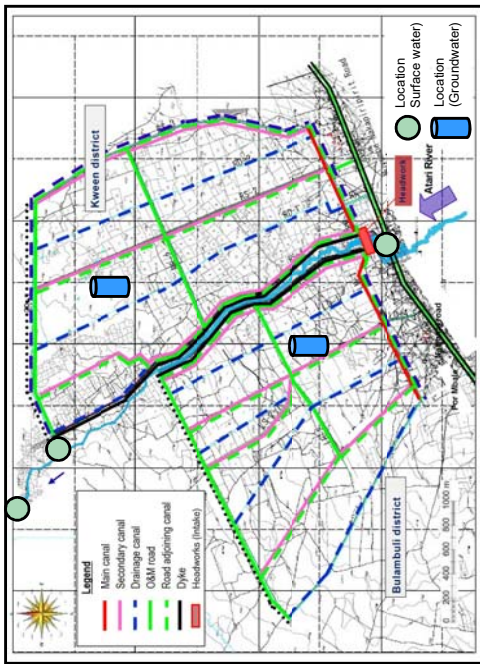
*1: Environmental standards relating to the water pollution of groundwater in Japan

*2: Concentration in total as N

Source: JICA OD Team (2018)

(3) Location of Water Quality Monitoring

Monitoring location of the water quality monitoring is planned in Atari Area as shown in Fig. 4-3-2. Three points (upstream, confluence point of drainage canal, downstream) in the Atari River are planned for the monitoring of surface water and two boreholes are planned for the monitoring of groundwater.



Source: JICA OD Team (2018)

Fig. 4-3-2. Location of Water Quality Monitoring

(4) Analytical Laboratory

Water quality analysis including the pesticide analysis is available by the laboratories in Uganda. The DGAL is capable to conduct water quality analysis including pesticides. The service cost of the pesticides analysis by the DGAL is shown in the Table 4-3-6. The analysis cost for the water samples will be borne by the contractor during construction phase and by MAAIF during operation phase.

Table 4-3-6. Cost of Water Quality Analysis for Pesticides in DGAL

Service	Analysis Item	Cost (UGX/ sample)
Pesticides Analysis (Water Sample)	Organochlorinated Pesticides (Simultaneous Analysis)	200,000
	Organophosphorus Pesticides (Simultaneous Analysis)	200,000

Source: Web site of the Directorate of Government Analytical Laboratory (DGAL), Ministry of Internal Affairs

(5) EMoP and Monitoring Form concerning the Water Quality

It is proposed to revise the Environmental Monitoring Plan (hereinafter referred to as "EMoP") and Environmental Monitoring Form from the version of Minutes of Discussion on the Preparatory Survey for the Project for Atari Irrigation System⁷ issued on 14th June 2018.

a) EMoP (Environmental Monitoring Plan)

It is proposed to revise the EMoP concerning the water quality as follows;

Table 4-3-7. Environmental Monitoring Plan

No.	Item	Parameter	Method	Location	Frequency	Responsibility
2	Water Pollution	PH, DO, BOD, TN, TP, Turbidity & oil	Sampling test	2 points: 1) Upstream of Headworks to be constructed 2) After drainage canal to be constructed	Monthly (except TN, TP)	Contractor & Subcontractor
			Visual inspection		Biannually (TN, TP)	
1	Water Pollution	Quantitative PH, DO, BOD, TN, TP	Sampling test	3 points: 1) Upstream of Headworks 2) Confluence point of drainage canal and Alari River 3) Downstream of confluence point	Monthly (except TN & TP) Biannually (TN & TP)	MAAIF
			Visual inspection			
			Qualitative Turbidity, Oil			
6	Groundwater	Adin, Atrazine, DDT, Simazine, Endrin, Simeoxin, Trifluralin	Sampling test	3 points: 1) Upstream of Headworks 2) Confluence point of drainage canal and Alari River 3) Downstream of confluence point	Biannually (1 time x 2 farming seasons)	MAAIF
			Visual inspection			
			Quantitative NO ₃ -N, NO ₂ -N			
6	Groundwater	Adin, Atrazine, DDT, Simazine, Endrin, Simeoxin, Trifluralin	Sampling test	Two points of existing wells: 1) upstream of the Project Site (outside of the Project Site) 2) downstream of the Project Site (within the Project Site)	Biannually (1 time x 2 farming seasons)	MAAIF
			Visual inspection			
			Quantitative NO ₃ -N, NO ₂ -N			

Remarks:

- DO: Dissolved Oxygen
- BOD: Biological Oxygen Demand
- TN: Total Nitrogen
- TP: Total Phosphorus
- NO₃-N: Nitrate Nitrogen
- NO₂-N: Nitrite Nitrogen

b) Environmental Monitoring Form on Agricultural Chemicals

It is proposed to revise the Environmental Monitoring Form on agricultural chemicals concerning the water quality as follows;

ENVIRONMENTAL MONITORING FORM ON AGRICULTURAL CHEMICALS

Construction Phase

2. Pollution

Item	Unit	Measured Value (mean)	Measured value (max)	Project Standard	Measurement point	Frequency
Water Quality						
Quantitative Analysis						
pH	-	-	-	6.5-8.5 ²	2 points: 1) Upstream of Headworks to be constructed 2) After drainage canal to be constructed	Monthly (except TN & TP), Biannually (TN & TP)
DO	mg/L	-	-	4.7 ¹		
BOD	mg/L	-	-	14.0 ¹		
TN	mg/L	-	-	11.3 ¹		
TP	mg/L	-	-	1.0 ¹		
Qualitative Analysis						
Item	-	Monitoring result	-	-	Measurement point	
Turbidity	-	-	-	-	-	
Oil	-	-	-	-	-	

¹: Maximum values obtained by baseline survey described in EIA (2017).

²: Japan's environmental standards for type-C river water (3rd class for fishery and 1st for industrial water)

⁷ After the conclusion of minutes, the project name was changed to as "the Project for the Development of Irrigation System in Atari Basin Area".

Operation Phase

2. Pollution

Item	Unit	Measured Value (mean)	Measured value (max)	Project Standard	Measurement point	Frequency
Water Quality						
Quantitative Analysis						
pH	-			6.5-8.5 ^{*2}	3 points: 1)Upstream of Headworks	Monthly (except TN & TP), Biannually (TN & TP)
DO	mg/L		4.7 ¹	14.0 ¹	2)Confluence point of drainage canal and Alari River	
TN	mg/L		11.3 ¹	1.0 ¹	3)Downstream of confluence point	
TP	mg/L		1.0 ¹			
Qualitative Analysis						
Turbidity				-		
Oil				-		
Monitoring for the pesticides use						
Aldrin	µg/			0.01 ^{*3}	3 points: 1)Upstream of Headworks	Biannually (1 time x 2 farming seasons)
Atrazine	µg/			2.0 ^{*3}	2)Confluence point of drainage canal and Alari River	
DDT	µg/			0.025 ^{*3}	3)Downstream of confluence point	
Endsulfan	µg/			0.01 ^{*3}		
Endrin	µg/			0.01 ^{*3}		
Simaxine	µg/			4 ^{*3}		
Trifluralin	µg/			0.03 ^{*3}		

*1: Maximum values obtained by baseline survey described in EIA (2017).

*2: Japan's environmental standards for type-C river water (3rd class for fishery and 1st for industrial water)

*3: Environmental Quality Standard for Substances And Certain Other Pollutants, European Union

3. Natural Environment

Item	Unit	Measured Value (mean)	Measured value (max)	Project Standard	Measurement point	Frequency
Groundwater						
Quantitative Analysis						
NO ₂ -N	mg/L			10 ¹ (in total as N)	Two points of existing wells: 1)upstream of the Project Site (outside of the Project Site) 2)downstream of the Project Site (within the Project Site)	Biannually
NO ₃ -N	mg/L				Two points of existing wells: 1)upstream of the Project Site (outside of the Project Site) 2)downstream of the Project Site (within the Project Site)	
Qualitative Analysis						
Turbidity	-			-		
Oil	-			-		
Monitoring for the pesticides use						
Aldrin	µg/			0.01 ^{*2}	Two points of existing wells: 1)upstream of the Project Site (outside of the Project Site) 2)downstream of the Project Site (within the Project Site)	Biannually (1 time x 2 farming seasons)
Atrazine	µg/			2.0 ^{*2}		
DDT	µg/			0.025 ^{*2}		
Endsulfan	µg/			0.01 ^{*2}		
Endrin	µg/			0.01 ^{*2}		
Simaxine	µg/			4 ^{*2}		
Trifluralin	µg/			0.03 ^{*2}		

*1: Japan's environmental standards for groundwater

*2: Environmental Quality Standard for Substances And Certain Other Pollutants, European Union

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- The National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999
- The National Environment (Impacts Assessment) Regulations, 1998
- The National Environment (Waste Management) Regulations, 1999
- The Water Act,
- The Water (Water Resources) Regulations, 1998
- The Water (Waste Discharge) Regulations, 1998
- The Agricultural Chemicals (Control) Act, 2006
- Register of Agricultural Chemical Registered Under Section 4 of the Agricultural Chemicals (Control) Act, 2006 as at 26th June, 2018
- Environmental Quality Standard for Substances And Certain Other Pollutants, European Union, 2008
- Environmental Standard for Water Pollution in Japan

Attachment Active List of Registered Pesticides in Uganda



MINISTRY OF AGRICULTURE ANIMAL INDUSTRY AND FISHERIES

REGISTER OF AGRICULTURAL CHEMICAL REGISTERED
UNDER SECTION 4 OF THE AGRICULTURAL CHEMICALS (CONTROL) ACT, 2006 AS AT 26TH JUNE, 2018

PERIOD OF REGISTRATION	THE REGISTRATION NUMBER	TRADE NAME/COMMERCIAL NAME	NAME OF THE ACTIVE INGREDIENT(S) AND CONCENTRATION	NAME OF THE REGISTRANT
26/6/2018	UgC/2018/001889/He/RR	STELLAR STAR 210SL	Topramezone 50g/l + Dicamba 160g/l	BASF SE
26/6/2018	UgC/2018/001889/He/RR	STOMP 455SC	Pendimethalin 455g/l	BASF SE
26/6/2018	UgC/2018/001891/He/RR	INTEGRITY 668 EC	Saflufenacil 68g/l + Dimethenamid-P 600g/l	BASF SE
26/6/2018	UgC/2018/001890/Fu/RR	OPERA 183SE	Pyraclostrobin 133g/l + Epoxiconazole 50g/l	BASF SE
14/6/2018	UgC/2018/001889/Fe/R	MAXICARE	N 20% + P2O5 20% + K2O 20% + TE	ASTRA INDUSTRIES COMPLEX Co. LTD
11/6/2018	UgC/2018/001888/He/RR	SUPANIL 70SL	Butachlor 350g/l + Propanil 350g/l	IPROCHEM COMPANY LTD, CHINA
7/6/2018	UgC/2018/001887/He/RR	2,4-D SUPA AMINE 72SL	2,4-D Amine 720g/l	HANGZHOU QUINFENG AGROCHEMICALS Co. LTD, CHINA
7/6/2018	UgC/2018/001886/He/RR	SUPASATE 48SL	Glyphosate 480g/l	HANGZHOU QUINFENG AGROCHEMICALS Co. LTD, CHINA

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1/6/2018	UgC/2018/001885/In/RRR	SEKAPYRIFOS 48EC	Chlorpyrifos 480g/l	SINOCHEM SHANGAI, CHINA
1/6/2018	UgC/2018/001884/Fu/RRR	SEKAZEB 80WP	Mancozeb 800g/kg	SINOCHEM SHANGAI, CHINA
1/6/2018	UgC/2018/001883/He/RRR	SEKASATE 36SL	Glyphosate 360g/l	SINOCHEM SHANGAI, CHINA
1/6/2018	UgC/2018/001882/He/RRR	SEKA 2,4-D AMINE 720SL	2,4-D Amine 720g/kg	SINOCHEM SHANGAI, CHINA
1/6/2018	UgC/2018/001881/In/R	EMINENT 5WDG	Emamectin Benzoate 50g/kg	
1/6/2018	UgC/2018/001880/He/RR	HERBISATE 48SL	Glyphosate 480g/l	SINOCHEM NINGBO LTD, CHINA
1/6/2018	UgC/2018/001879/He/RR	HERBKILL 72SL	2,4-D Amine 720g/l	SINOCHEM NINGBO LTD CHINA
30/5/2018	UgC/2018/001878/In/RRR	DERA BLUE CROSS	Malathion 2%	DERA CHEMICALS INDUSTRIES NAIROBI, KENYA
29/5/2018	UgC/2018/001877/Fu/RR	FUNGCUR 50WP	Copper oxychloride 500g/kg	SINOCHEM NINGBO LTD CHINA
25/5/2018	UgC/2018/001876/In/RRRRR	AGRO-DETRIN 2.5EC	Deltamethrin 25g/l	ASIATIC AGRO INDUSTRIES (PTE) SINGAPORE
25/5/2018	UgC/2018/001875/In/RRRRR	AGRO-ALPHACYPER 10EC	Cypermethrin 100g/l	ASIATIC AGRO INDUSTRIES (PTE) SINGAPORE
25/5/2018	UgC/2018/001874/In/RRRRRRRR	AGRO-MALON 57EC	Malathion 570g/l	ASIATIC AGRO INDUSTRIES (PTE) SINGAPORE
24/5/2018	UgC/2018/001873/He/RR	MILSATE 41SL	Glyphosate 410g/l	HANGZHOU WEIYUAN CHEMICAL Co. LTD
24/5/2018	UgC/2018/001872/In/RR	MILCYPER 5EC	Cypermethrin 50g/l	HANGZHOU WEIYUAN CHEMICAL Co. LTD
24/5/2018	UgC/2018/001871/He/RR	MIL- 2,4-D 72SL	2,4-D Amine 720g/l	HANGZHOU WEIYUAN CHEMICAL Co. LTD
23/5/2018	UgC/2018/001870/He/RR	AFRI-SATE 48SL	Glyphosate 480g/l	ANHUI YOUNGSUN PESTICIDE Co LTD
23/5/2018	UgC/2018/001869/He/RR	AFRI-2,4-D AMINE 72SL	2,4-D Amine 720g/l	ANHUI YOUNGSUN PESTICIDE Co LTD
23/5/2018	UgC/2018/001868/He/RR	ROUND ALL 48SL	Glyphosate IPA salt 480g/l	SHENZHEN KING QUENSON INDUSTRY Co. LTD
21/5/2018	UgC/2018/001867/Fu/RR	T-BUZZ 25 SC	Tebuconazole 250g/l	ZAGRO (U) LTD
21/5/2018	UgC/2018/001866/In/RR	FEZIDOL 12.5% WDG	Thiamethoxam 125g/kg	ZAGRO (U) LTD
15/5/2018	UgC/2018/001865/Fe/R	KARA	N 8.96% + P2O5 5.2% + K2O 17.8 + B 0.13% + Fe 0.48% + Zn 0.33% + Ascophyllum nodosum 10g/l	SUSTAINABLE AGRO-SOLUTIONS S.A SPAIN
15/5/2018	UgC/2018/001864/Fe/R	FOLCROP B-Mo	N 6.3% + B 6.5% + Mo 0.23%	SUSTAINABLE AGRO-

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Attachment Active List of Registered Pesticides in Uganda

15/5/2018	UgC/2018/001863/Fe/R	FORCROP 4-16-28	N 6.3% + P2O5 16.9% + K2O 28.6% + B 0.3% + Mo 0.02%	SOLUTIONS S.A SPAIN SUSTAINABLE AGRO-SOLUTIONS S.A SPAIN
15/5/2018	UgC/2018/001862/Fe/R	FORCROP GOLDEN 10-14-4	N 10.46% + P2O5 14.4% + K2O 3.9% + MgO 0.4% + B 0.14% + Zn 0.7% + Amino acids 10.7%	SUSTAINABLE AGRO-SOLUTIONS S.A SPAIN
10/5/2018	UgC/2018/001861/In/R	MD THOATE 40EC	Dimethoate 400g/l	WEMAX AGRO LTD SHENZHEN, CHINA
10/5/2018	UgC/2018/001860/Fu/R	TOPLAXYL-M 72WP	Metalaxyl 80g/kg + Mancozeb 640g/kg	WEMAX AGRO LTD SHENZHEN, CHINA
10/5/2018	UgC/2018/001859/In/R	CYPERFORCE 5EC	Cypermethrin 50g/l	BHARAT INSECTICIDE LTD, NEW DELHI, INDIA
10/5/2018	UgC/2018/001858/In/RR	DIMETHRIN 28EC	Cypermethrin 30g/l + Dimethoate 250g/l	MAGHMANI ORGANICS LTD, INDIA
10/5/2018	UgC/2018/001857/In/RR	CYPERSCOPE 5EC	Cypermethrin 50g/l	HERANBA INDUSTRIES LTD, MUMBAI INDIA
10/5/2018	UgC/2018/001856/He/R	AMINEGLYPHO 360 SL	2,4-D Amine 120g/l + Glyphosate 240g/l	ANHUI ZHONGSHAN CHEMICAL INDUSTRY CO. LTD CHINA
10/5/2018	UgC/2018/001855/Fu/R	METALAMANCO 72WP	Metalaxyl 80g/Kg + Mancozeb 640g/kg	ANHUI ZHONGSHAN CHEMICAL INDUSTRY CO. LTD CHINA
10/5/2018	UgC/2018/001854/Fu/RR	HANGMANCOZEB 80WP	Mancozeb 800g/kg	HANGZHOU JIKE TRADE CO. CHINA
9/5/2018	UgC/2018/001853/He/RRR	AMETREX 50SC	Ametryn 500g/Kg	HANGZHOU JIKE TRADE CO. CHINA
9/5/2018	UgC/2018/001852/Fu/RRR	UGONALL 58WP	Mancozeb 480g/Kg + Metalaxyl 100g/Kg	HANGZHOU JIKE TRADE CO. CHINA
8/5/2018	UgC/2018/001851/He/RRR	ERAMINE 2,4-D 72SL	2,4-D Amine 720g/l	SINOCHEM SHANGHAI CORP, CHINA
8/5/2018	UgC/2018/001850/In/RRR	LB-AMBUSH 5EC	Cypermethrin 50g/l	MODERN INSECTICIDE INDIA
7/5/2018	UgC/2018/001849/He/RRRRR	AGRO-STOMP 330EC	Pendimethalin 330g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001848/In/RRRRR	VALUE 5EC	Cypermethrin 50g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001847/In/RRRRR	AGRO-LAMBACIN 3.5EC	Lambda-cyhalothrin 30g/l + Profenofos 5g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE

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7/5/2018	UgC/2018/001846/Fu/RRRRRRRRRR	AGRO-ZEB 80WP	Mancozeb 800g/kg	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001845/In/RRRRRRRRR	AGRO-PYRIFOS 48EC	Chlorpyrifos 480g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001844/He/RRRRRRRRR	AGRO-2,4-D AMINE 72SL	2,4-D Amine 720g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001843/He/RRRRRRRRRR	AGRO-SATE 36SL	Glyphosate 360g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001842/In/RRRRR	STA 1.8EC	Abamectin 18g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001841/In/RRRRRR	AGRO-DELLIC RAIN DUST 1.8%	Pirimiphos methyl 16g/kg + Permethrin 3g/kg	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001840/In/RRRRRRRRRR	AGRO-CYTHRIN 5EC	Cypermethrin 50g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001839/In/RRRRRRRR	AGRO-CYPRO 440 EC	Cypermethrin 40g/l + Profenofos 400g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001838/In/RRRRRRRRRR	AGRO-CHLORDI 500EC	Chlorpyrifos 278g/l + Dimethoate 222g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001837/In/RRRRRRRRRR	AGRO-THOATE 40EC	Dimethoate 400g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001836/In/RRRR	AGRO-LAMBDA 2.5EC	Lambdacyhalothrin 250g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001835/In/RRRRR	TERMINATOR 480EC	Chlorpyrifos 480g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
7/5/2018	UgC/2018/001834/In/RRRRRR	FENDAGRO 6SC	Alpha-Cypermethrin 60g/l	ASIATIC AGRICULTURAL INDUSTRY SINGAPORE
4/5/2018	UgC/2018/001833/Fe/R	VERNO	Copper 300g/kg + Zinc 300g/kg	NORDOX A.S OSLO NORWAY
4/5/2018	UgC/2018/001832/He/RR	WEED END XI 75.7	Ammonium salt of Glyphosate 757g/kg	CROP STAR CHEMICALS LTD, CHINA
4/5/2018	UgC/2018/001831/Ph/R	SEED BOOSTER	Cytokines	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001830/Fe/R	SYMBION VAM PLUS	Glomus fasciculatum + Gigaspora species	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001829/Fe/R	SUNGUARD	Fatty alcohol (80%) + Ethoxylated Caster oil (5%) + Lime solution (10%) + Sesame	OSHO CHEMICAL INDUSTRIES LTD

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Attachment Active List of Registered Pesticides in Uganda

			oil (5%)	
4/5/2018	UgC/2018/001828/Fe/R	OSHOZYME	4.78%N + 2.81%P + 3.09%K + 0.1%Zn + Mo + B + Mg + Ca	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001827/Ph/R	PLANTONE 4.5SL	1-Naphthyl acetic acid 45g/l	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001826/Ph/R	ROOTEX-IBA 0.6%	Indole butyric acid 0.6%	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001825/Fu/R	SULCOP 50DF	Copper oxychloride 500g/kg	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001824/In/R	SULBAN 48EC	Chlorpyrifos 480g/l	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001823/He/R	OSHOTHION 52.5EC	Malathion 525g/l	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001822/He/R	OCELAMECTIN 4.8EC	Abamectin 18g/l + Acetamiprid 30g/l	OSHO CHEMICAL INDUSTRIES LTD
4/5/2018	UgC/2018/001821/He/R	AFRI XL 75.7WSG	Ammonium salt of Glyphosate 757g/kg	ANHUI RUIFENG AGROCHEMICALS Co. LTD, CHINA
4/5/2018	UgC/2018/001820/In/R	ROUND-ALL MAX 75.7SG	Glyphosate Ammonium salt 757g/kg	SHENZHEN KING QUENSON INDUSTRY Co. LTD CHINA
4/5/2018	UgC/2018/001819/In/R	RWENZOMECTIN 4.8EC	Abamectin 18g/l + 30g/l Acetamiprid	NANJING BESTGREEN CHEMICAL Co. LTD, NANJING CHINA
03/05/2018	UgC/2018/001818/In/R	TARGET 50WDG	Emamectin 50g/Kg	CRYSTAL CROP PROTECTION PRIVATE LTD, DELHI INDIA
03/05/2018	UgC/2018/001817/In/R	JUDO PLUS 5EC	Lambda-cyhalothrin 50g/l	CRYSTAL CROP PROTECTION PRIVATE LTD, DELHI INDIA
03/05/2018	UgC/2018/001816/He/RRR	WEED END 41SL	Glyphosate 410g/l	CROPSTAR CHEMICAL INDUSTRY
03/05/2018	UgC/2018/001815/He/RR	WEED FIGHTER 48SL	Glyphosate 480g/l	SHANGHAI AGRO-CHINA CHEMICAL Co. LTD
30/4/2018	UgC/2018/001813/He/RRRR	SELECT 120EC	Clethodium 120g/l	TOMEN AGRO INC. C/O CALLIOPE FRANCE
26/4/2018	UgC/2018/001812/He/R	RWENZO-SATE 480SL	Glyphosate 480g/l	NANJING BEST GREEN CHEMICALS Co. LTD
26/4/2018	UgC/2018/001811/He/R	RWENZO-2,4-D 72SL	2,4-D amine 720g/l	NANJING BEST GREEN

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				CHEMICALS Co. LTD
26/4/2018	UgC/2018/001810/Fu/R	RWENZO-MANCOZEB 80WP	Mancozeb 800g/kg	NANJING BEST GREEN CHEMICALS Co. LTD
26/4/2018	UgC/2018/001809/Fu/RRRR	MANCODOSE	Mancozeb 800g/kg	ZAGRO PTE SINGAPORE
20/04/2018	UgC/2018/001808/Fe/RR	BIOTRENT		PT BIOSINDO MITRAJAYA INDONESIA
11/04/2018	UgC/2018/001807/In/RRR	ACTARA 25 WG	Thiamethoxam 250g/l	SYNGENTA AGRO CROP
11/4/2018	UgC/2018/001806/Fu/RRRRRRRR	RIDOMIL GOLD MZ 68 WG	Mancozeb 64% + Metalaxyl-M 4%	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001805/He/RRRRR	LUMAX	S-Metolachlor 375g/l + Terbutylazine 125g/l + Mesotrion 37.5g/l	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001804/He/RRRRR	FUSILADE FORTE	Fluozifop-P-butyl 150g/l	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001803/Fu/RRRRR	APRON STAR	Difenoconazole 2% + Thiamethoxam 2% + Metalaxyl 20%	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001802/Fu/RRRRR	MAXIM XL 035 FS	Fludioxonil + Metalaxyl	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001801/He/RRRRRRRR	PRIMAGRAM GOLD 660 SC	Atrazine 370g/l + S-Metachlor 290g/l	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001800/In/RRRRR	CRUISER 350 FS	Thiamethoxam 350g/l	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001799/Fu/RRRRR	THIOVIT 80WP	Sulphur 800g/Kg	SYGENTA CROP PROTECTION
11/4/2018	UgC/2018/001798/He/RRRRR	DUAL GOLD 960 EC	Metalachlor + Chloroacetamid	SYNGENTA CROP PROTECTION
11/4/2018	UgC/2018/001797/In/RRRRR	DYNAMEC 1.8EC	Abamectin 18g/l	SYNGENTA CROP PROTECTION
10/4/2018	UgC/2018/001796/He/RR	D AMINE 72SL	2,4-D Amine 720g/l	OSHO CHEMICAL INDUSTRIES LTD
10/4/2018	UgC/2018/001795/Fu/RR	OSHOTANE 80WP	Mancozeb 800g/Kg	OSHO CHEMICAL INDUSTRIES LTD
10/4/2018	UgC/2018/001794/In/RR	ALPHA 10EC	Alpha-cypermethrin 100g/l	OSHO CHEMICAL INDUSTRIES LTD
10/04/2018	UgC/2018/001793/In/RR	CYCLONE 505EC	Cypermethrin 10% + Chlorpyrifos 35%	OSHO CHEMICAL INDUSTRIES LTD
06/04/2018	UgC/2018/001792/He/RR	KUU 2,4-D 72SL	2,4-D Amine 720g/l	HANGZHOU TIANLONG BIOTECHNOLOGY Co. LTD CHINA
06/04/2018	UgC/2018/001791/He/RRR	KUUPHOSATE	Glyphosate 480g/l	SHANGHAI AGRO CHINA

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				INTERNATIONAL TRADE LTD
06/04/2018	UgC/2018/001790/In/RR	KUU CYPER	Cypermethrin 50g/l	HANGZHOU TIANLONG BIOTECHNOLOGY Co. LTD CHINA
03/04/2018	UgC/2018/001789/In/RRR	ALPHOS 56%	Aluminium phosphide 56%	UNITED PHOSPHOROUS LTD, INDIA
29/03/2018	UgC/2018/001788/Fu/RR	METALAXEB 72WP	Metalaxyl 40g/kg + Mancozeb 680g/kg	HANGZHOU TIANLONG BIOTECH Co. LTD, CHINA
29/03/2018	UgC/2018/001787/He/RR	WEED ROUND 48SL	Glyphosate 480g/l	HANGZHOU TIANLONG BIOTECH Co. LTD, CHINA
29/03/2018	UgC/2018/001786/In/R	SAFURAN 3G	Carbofuran 30g/kg	NINGBO SYNAROCHEM Co. LTD, CHINA
29/03/2018	UgC/2018/001785/In/R	NSANJA CYPER 10EC	Cypermethrin 100g/l	FORWARD CROP PROTECTION PRIVATE LTD, CHINA
29/03/2018	UgC/2018/001784/He/RR	HERBISATE 48SL	Glyphosate 480g/l	SINOCHEM NINGBO LTD, CHINA
29/03/2018	UgC/2018/001783/He/RR	HERBICILL 720SL	2,4-D Amine 720g/l	SINOCHEM NINGBO LTD, CHINA
26/03/2018	UgC/2018/001782/Fe/R	LEGUMEFIX	Bradyrhizobia japonicum	LEGUME TECHNOLOGY LTD, UNITED KINGDOM
16/03/2018	UgC/2018/001781/Fu/RRRR	RODAZIM 500SC	Carbendazim 500g/l	ROTAM AGRO-CHEMICALS LTD, HONGKONG
16/03/2018	UgC/2018/001780/Fu/RRRR	VOLAR 690WP	Dimetomorph 90g/kg + Mancozeb 600g/kg	ROTAM AGRO-CHEMICALS LTD, HONGKONG
16/03/2018	UgC/2018/001779/In/RRRR	JACKPOT 50EC	Lambda cyhalothrin 50g/l	ROTAM AGRO-CHEMICALS LTD, HONGKONG
27/02/2018	UgC/2018/001778/Fe/R	FERTIPLUS	NPK 4:3:3 + 65 OM	FERM O FEED, NETHERLANDS
27/02/2018	UgC/2018/001777/In/RR	IMITRUST 70WG	Imidacloprid 700g/kg	KING QUESON INDUSTRY GROUP, SHENZHEN CHINA
27/02/2018	UgC/2018/001776/In/RRRRR	ROCKETT 44EC	Profenofos 400g/l + Cypermethrin 40g/l	PI INDUSTRIES, INDIA
27/02/2018	UgC/2018/001775/In/RR	FENVEERELALE 20EC	Fenverelate 200g/l	ISAGRO ASIA, INDIA
27/02/2018	UgC/2018/001774/In/RRRRRRR	CYPERLACER 5EC	Cypermethrin 50g/l	ISAGRO ASIA, INDIA
27/02/2018	UgC/2018/001773/Fu/RRRRRRR	EMTHANE M45	Mancozeb 800g/kg	COROMANDEL INDIA
27/02/2018	UgC/2018/001772/Fu/RRRRRRRRR	MANCOFIL 80WP	Mancozeb 800g/kg	MS INDOFIL INDUSTRIES LTD, INDIA
12/02/2018	UgC/2018/001771/In/R	LARVET 44EC	Profenofos 400g/l +	M/S FORWARD CROP

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			Cypermethrin 40g/l	PROTECTION PRIVATE LTD, INDIA
07/02/2018	UgC/2018/001770/Fu/R	BUZZ 250EC	Tebuconazole 250g/l	M/S SULPHUR MILLS LTD, INDIA
07/02/2018	UgC/2018/001769/In/R	SPIKE 250WG	Thiamethoxam 250g/kg	M/S SULPHUR MILLS LTD, INDIA
07/02/2018	UgC/2018/001768/In/R	PRONTO 70WDG	Imidacloprid 700g/kg	M/S SULPHUR MILLS LTD, INDIA
07/02/2018	UgC/2018/001767/Fu/R	METALMAN 72 WG	Metalaxyl 8g/kg + Mancozeb 640g/kg	M/S SULPHUR MILLS LTD, INDIA
07/02/2018	UgC/2018/001766/In/R	TWINS 60WG	Lambda cyhalothrin 15g/kg + Imidacloprid 450g/kg	M/S SULPHUR MILLS LTD, INDIA
31/01/2018	UgC/2018/001765/Fe/R	COMBI FA	EDTA (Iron 4% + Mn 3% + Zn 4% + WS B 0.5% + Mo 0.05%)	SENFA TARIMSAL URUNLER LTD TURKEY- 0772818397
24/01/2018	UgC/2018/001764/He/RRR	ASCOMINE 72SL	2,4-D Amine 720g/l	HANGZHOU YILONG CHEMICAL INDUSTRIES CHINA
24/01/2018	UgC/2018/001763/In/RR	SICOTHOATE 40EC	Dimethoate 400g/l	SINOCHEM SHANGAI Co LTD CHINA 0774609299
19/01/2018	UgC/2018/001762/In/RRRR	HANGTHOATE 40EC	Dimethoate 400g/l	HANGZHOU AGROCHEMICAL INDUSTRIES, CHINA 0757-771550
19/01/2018	UgC/2018/001761/In/RRRR	DUDU ALL 45EC	Cypermethrin 100g/l + Chlorpyrifos 350g/l	HANGZHOU AGROCHEMICAL INDUSTRIES, CHINA 0757-771550
19/01/2018	UgC/2018/001760/He/RRRR	HURROW 80SC	Diuron 800g/l	HANGZHOU AGROCHEMICAL INDUSTRIES, CHINA 0757-771550
19/01/2018	UgC/2018/001759/He/RRRR	HASUNIL 60EC	Thiobencarb 400g/l + Propanil 200g/l	HANGZHOU AGROCHEMICAL INDUSTRIES, CHINA 0757-771550
19/01/2018	UgC/2018/001758/He/RRRR	HANGZHOU 2,4-D AMINE 72SL	2,4-D Amine 720g/l	HANGZHOU AGROCHEMICAL INDUSTRIES, CHINA 0757-771550
19/01/2018	UgC/2018/001757/He/RR	OXYFEN 24EC	Oxflufen 240g/l	HANGZHOU AGROCHEMICAL INDUSTRIES, CHINA 0757-771550

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19/01/2018	UgC/2018/001756/He/RR	BEANSCLEAN SUPER 15.5EC	Bentazone 155g/l	HANGZHOU AGROCHEMICAL INDUSTRIES, CHINA 0757-771550
18/01/2018	UgC/2018/001755/He/R	TRAST 20SL	Glufosinate Ammonium 200g/l	ZAGRO SINGAPORE PTE LTD
18/01/2018	UgC/2018/001754/He/R	ZAZONE 48SL	Bentazone 480g/l	ZAGRO SINGAPORE PTE LTD
18/01/2018	UgC/2018/001753/He/R	ZAMASIN 10SL	Imazethapyr 100g/l	ZAGRO SINGAPORE PTE LTD
18/01/2018	UgC/2018/001752/He/R	ZADIM 24SC	Clethodim 240g/l	ZAGRO SINGAPORE PTE LTD
18/01/2018	UgC/2018/001751/He/R	CHOICE 2,4-D AMINE 720SL	2,4-D Amine 720g/l	SHENZHEN KING QUENSON INDUSTRY Co LTD
17/01/2018	UgC/2018/001750/Fu/RRRRRRR	UTHANE 80WP	Mancozeb 800g/kg	UPL LIMITED, INDIA
15/01/2018	UgC/2018/001749/He/RRRR	WEEDMASTER 50SL	Glyphosate 500g/lP	KING TECH CORP CHINA
15/01/2018	UgC/2018/001748/He/RRRR	BUTANIL 70EC	Propanil 350g/l + Butachlor 350g/l	KING TECH CORP CHINA
15/01/2018	UgC/2018/001747/Fu/RRR	INDOFIL 80WP	Mancozeb 800g/kg	INDOFIL INDUSTRY LTD, INDIA
15/01/2018	UgC/2018/001746/In/RRRR	DUDU CYPHER 5EC	Cypermethrin 50g/l	M/S MEGHMAN ORGANICS, INDIA
12/01/2018	UgC/2018/001745/In/R	BASH 247 SC	Lambda-cyhalothrin 106g/l + Thiamethoxam 141g/l	MS FORWARD SHANGHAI LTD, CHINA
12/01/2018	UgC/2018/001744/In/R	EXTREME 44EC	Profenofos 400g/l + Cypermethrin 40g/l	MS FORWARD SHANGHAI LTD, CHINA
11/01/2018	UgC/2018/001743/He/R	OXYGOLD 24EC	Oxyfloufen 240g/l	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001742/In/R	PEARL 500SC	Carbendazim 500g/l	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001741/Fu/R	CONTROL 70WDG	Thiophanate-methyl 700g/kg	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001740/In/R	MIDA 200SL	Imidacloprid 200g/l	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001739/In/R	SKANA SUPER GRAIN DUST 2.3%	Malathion 20g/kg + Permethrin 3g/kg	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI

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11/01/2018	UgC/2018/001738/In/R	UMEME TOP 5EC	Lambda-cyhalothrin 50g/l	KENYA M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001737/Fe/R	AGROFEED	NPK 12:10:8 + TE	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001736/Fe/R	EASYGRO CALCIUM	NPK14: 0:2 + TE	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001735/Fe/R	EASYGRO FLOWER & FRUITS	NPK 14:11:33 + TE	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001734/Fe/R	EASYGRO VEGETABLE	NPK 27:10:16 + TE	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001733/Fe/R	EASYGRO STARTER	NPK18:20: 21 + TE	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
11/01/2018	UgC/2018/001732/Fe/R	POTPHOS	NPK 0:5:30 + TE	M/S OSHO CHEMICAL INDUSTRIES LTD, NAIROBI KENYA
08/01/2018	UgC/2018/001731/Fe/R	COMPOST PRODUCT AGROW	C 9% + N 0.9% + P 0.3% + K 1.3% + Ca 1.1% + Mg 0.2% + TE (Cu 8.6ppm + Fe 51.2ppm + Zn 25.8ppm + Mn 15.8ppm)	M/S AFRICAN POWER INITIATIVE
08/01/2018	UgC/2018/001730/He/R	THRASH 56EC	2,4-D Amine 200g/l + Propanil 360g/l	M/S BHARAT INSECTICIDES LTD
08/01/2018	UgC/2018/001729/Fe/R	MERLO Q	Organic matter 40% + Nitrogen 4% + Organic P18%	M/S SENFA TARIMSAL URUNLER LTD, TURKEY
08/01/2018	UgC/2018/001728/He/R	MAIZE PLUS 40 OD	Nicosulfuron 400g/l	M/S WEMAX AGRO LTD
05/01/2018	UgC/2018/001727/In/R	SELECT PLUS 315EC	Lambda-cyhalothrin 15g/l + Profenofos 300g/l	ASIATIC AGRICULTURAL INDUSTRIES PTE, LTD SINGAPORE
22/12/2017	UgC/2017/001726/He/RRR	WEED END 41SL	Glyphosate 410g/l	CROP STAR CHEMICALS INDUSTRY

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Attachment Active List of Registered Pesticides in Uganda

12/12/2017	UgC/2017/001725/AD/RR	SUPER GRO	Wetting agent & Adjuvant	NEOLIFE INTERNATIONAL (PTY) LTD
15/11/2017	UgC/2017/001724/He/R	VIRON 80WDG	Diuron 800g/kg	ASIATIC AGRICULTURAL INDUSTRIES, PTE LTD-SINGAPORE
15/11/2017	UgC/2017/001723/Fu/R	NUTHANE 80WP	Mancozeb 800g/kg	COROMANDEL INTERNATIONAL LTD, INDIA
15/11/2017	UgC/2017/001722/Fu/R	GLORY 75WG	Mancozeb 700g/kg + Azoxystrobin 50g/kg	UNITED PHOSPHORUS LTD, INDIA
15/11/2017	UgC/2017/001721/Fu/R	ELIXIR 75WG	Mancozeb 625g/kg + Chlorothalonil 125g/kg	UNITED PHOSPHORUS LTD, INDIA
15/11/2017	UgC/2017/001720/In/R	BANTER 50WG	Bifenazate 500g/kg	UNITED PHOSPHORUS LTD, INDIA
24/10/2017	UgC/2017/001719/In/R	ACTELLIC GOLD DUST 1.96D	Pyrimiphos-methyl 1.6% + Thiamethoxam 0.36%	SYNGENTA AGRO AG, SWITZERLAND
24/10/2017	UgC/2017/001718/In/R	SOLVIGO 108SC	Abamectin + Thiamethoxam	SYNGENTA AGRO AG, SWITZERLAND
18/10/2017	UgC/2017/001717/Fu/R	MITAZEB 80WP	Mancozeb 800g/kg	SHANGHAI E-TONG CHEMICAL Co. LTD, CHINA
18/10/2017	UgC/2017/001716/In/R	ALBAZ 10EC	Alpha cypermethrin 100g/l	CMI LTD, ENGLAND
18/10/2017	UgC/2017/001715/He/R	HIGH STOP 48SL	Glyphosate isopropyl ammonium 480g/l	ANHUI HUAXING CHEMICAL INDUSTRY Co. LTD, CHINA
18/10/2017	UgC/2017/001714/He/RRRR	BUTANIL 70SL	Propanil 350g/l + Butachlor 350g/l	KING TECH CORPORATION, CHINA
18/10/2017	UgC/2017/001713/In/RRRR	DUDU CYPHER 5EC	Cypermethrin 50g/l	KING TECH CORPORATION, CHINA
18/10/2017	UgC/2017/001712/He/RRRR	WEEEDMASTER 50SL	Glyphosate 500g/l	KING TECH CORPORATION, CHINA
18/10/2017	UgC/2017/001711/Fu/RRR	INDOFIL M45	Mancozeb 800g/kg	INDOFIL CHEMICAL Co. INDIA
06/10/2017	UgC/2017/001710/Fu/RRR	UNILAX 72WP	Metalaxyl 80g/kg + Mancozeb 640g/kg	UNITED PHOSPHORUS, INDIA
06/10/2017	UgC/2017/001709/In/RRR	UTHOATE 40EC	Dimethoate 400g/l	UNITED PHOSPHORUS, INDIA
06/10/2017	UgC/2017/001708/In/RRR	UCHLORVOS 100EC	Dichlorvos 1000g/l	UNITED PHOSPHORUS, INDIA
06/10/2017	UgC/2017/001707/He/RRR	UPHOSATE 48SL	Glyphosate 480g/l	UNITED PHOSPHORUS, INDIA
06/10/2017	UgC/2017/001706/In/RRR	UMETHRIN 5EC	Cypermethrin 50g/l	UNITED PHOSPHORUS, INDIA

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04/10/2017	UgC/2017/001705/He/RR	BORAL 480SC	Sulfentrazone 480g/l	MS FMC CORPORATION USA
04/10/2017	UgC/2017/001704/In/RRRR	PYGAR 35EC	Pyrethrin 10g/l + Garlic extracts 340g/l	JUANCO SPS LTD, NAIROBI KENYA
04/10/2017	UgC/2017/001703/In/RRRR	MARSHAL 25EC	Carbosulfan 250g/l	JUANCO SPS LTD, NAIROBI KENYA
04/10/2017	UgC/2017/001702/In/RRRR	DRAGNET FT	Permethrin 380g/l	JUANCO SPS LTD, NAIROBI KENYA
2/10/2017	UgC/2017/001701/He/R	WEED ROUND TURBO 75.7 SG	Glyphosate ammonium salt 757g/l	AGRICORE CHEMICAL INDUSTRY Co. LTD
2/10/2017	UgC/2017/001700/In/R	KUU-ACELAMECTIN 4.8EC	Abamectin 18g/l + Acetamiprid 30g/l	AGRICORE CHEMICAL INDUSTRY Co.LTD
21/09/2017	UgC/2017/001699/He/R	TILLER GOLD 164 0D	Ethoxy-sulfuron 20g/l + Fenoxaprop-p-ethyl 69g/l + Isoxadifen-ethyl 75g/l	BAYER EAST AFRICA
21/09/2017	UgC/2017/001698/Fu/R	NATIVO 300SC	Tebuconazole 200g/l + Trifloxystrobin 100g/l	BAYER EAST AFRICA
21/09/2017	UgC/2017/001697/In/RR	GARNET 20SC	Fipronil 200g/l	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN
21/09/2017	UgC/2017/001696/In/RR	CYPERMETHRIN 5EC	Cypermethrin 50g/l	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN
21/09/2017	UgC/2017/001695/In/RR	CHLOROFET 48EC	Chlorpyrifos 480g/l	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN
21/09/2017	UgC/2017/001694/In/RR	SPORNEB 70WP	Propineb 700g/kg	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN
21/09/2017	UgC/2017/001693/In/RR	VAPCOMORE 20SP	Acetamiprid 200g/kg	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN

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Attachment Active List of Registered Pesticides in Uganda

21/09/2017	UgC/2017/001692/In/RR	COMMANDO 20SL	Imidacloprid 200g/l	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN
21/09/2017	UgC/2017/001691/In/RR	DE DE VAP 50EC	Dichlorvos 500g/l	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN
21/09/2017	UgC/2017/001690/In/RR	DELTRIN 2.5EC	Deltamethrin 25g/l	VETERINARY AND AGRICULTURAL PRODUCT MFG Co. LTD P.O.BOX 17058 AMMAN-JORDAN
19/09/2017	UgC/2017/001689/In/RRRRR	CONFIDOR 20SL	Imidacloprid 200g/l	BAYER EAST AFRICA
19/09/2017	UgC/2017/001688/In/RRRRRRR	DECIS 2.5EC	Deltamethrin 25g/l	BAYER EAST AFRICA
19/09/2017	UgC/2017/001687/He/RRRR	RONSTAR 25EC	Oxadiazon 250g/l	BAYER EAST AFRICA, KENYA
19/09/2017	UgC/2017/001686/He/RRR	SENCOR PLUS 517.5 SC	Indaziflam 37.5g/l + Metribuzin 480g/l	BAYER EAST AFRICA
19/09/2017	UgC/2017/001685/In/RRRRR	GAUCHO 70WP	Imidacloprid 700g/kg	BAYER EAST AFRICA, KENYA
19/09/2017	UgC/2017/001684/In/RRR	THUNDER 145 OD	Betacyfluthrin 45g + Imidacloprid 100g/l	BAYER EAST AFRICA, KENYA
19/09/2017	UgC/2017/001683/Fu/RR	AUXO 312EC	Tembofrione 50g/l+ Bromoxymil Octanoate 262g/l	BAYER EAST AFRICA LTD
19/09/2017	UgC/2017/001682/Fu/RR	CONSENTO 450SC	Propamocarb hydrochloride 375g/l+ Fenamidone 75g/l	BAYER EAST AFRICA LTD
18/09/2017	UgC/2017/001681/He/R	AGRIFORCE 100 SC	Bispyribac sodium 100g/l	NANJING BOCHEN PESTICIDE CHEMICALS CO LTD, CHINA
18/09/2017	UgC/2017/001680/He/R	FORCETOP 330 EC	Pendimethalin 330g/l	SHANDONG BINNONG TECHNOLOGY CO LTD, CHINA
18/09/2017	UgC/2017/001679/In/R	PYRETHRUM EWC*	Pyrethroids	AGROPY LTD RWANDA
18/09/2017	UgC/2017/001678/In/R	PYRETHRUM 5EW	Pyrethroids	AGROPY LTD RWANDA
18/09/2017	UgC/2017/001677/He/R	STARFORCE 150EC	Fluazi-fop-P-Butyl 150g/l EC	SHANDONG BINNONG TECHNOLOGY Co. LTD SHANDONG CHINA
18/09/2017	UgC/2017/001676/Fe/RR	G.GANIA 41.2SP	Gibberellic acid 0.7% + Glycine 40% + Alpha naphthalene acetic acid 0.5%	VAPCO LTD

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18/09/2017	UgC/2017/001675/Fu/RR	MANCOTHANE 80WP	Mancozeb 800g/kg	VAPCO LTD
18/09/2017	UgC/2017/001674/Fe/RR	GIBBROVAP 2SL	Gibberellic acid 20g/l	VAPCO LTD
18/09/2017	UgC/2017/001673/In/RR	FLORATON 1.7SL	Alpha Naphthyl acetic acid 4.5g/l + Alpha Naphthyl acetamide 12.5g/l	VAPCO LTD
18/09/2017	UgC/2017/001672/He/RR	GROUND-JP 48SL	Glyphosate 480g/l	VAPCO LTD
18/09/2017	UgC/2017/001671/In/RR	BLAST 44.1SL	Bentazone 441g/l	VAPCO LTD
18/09/2017	UgC/2017/001670/In/RR	CHLOROFET 5 DP	Chlorpyrifos 50g/kg	VAPCO LTD
18/09/2017	UgC/2017/001669/Fu/R	RAPID 50SC	Carbendazim 500g/l	BHARAT INSECTICIDES LTD, INDIA
18/09/2017	UgC/2017/001668/Fu/R	PROTECT 72WP	Cymoxanil 80g/kg + Mancozeb 640g/kg	BHARAT INSECTICIDES LTD, INDIA
18/09/2017	UgC/2017/001667/Fu/R	TORNADO 75WP	Carbendazim 120g/kg + Mancozeb 630g/kg	BHARAT INSECTICIDES LTD, INDIA
18/09/2017	UgC/2017/001666/He/R	CONQUER 75.5 SC	Glyphosate Ammonium salt 755g/l	SINOCHEM AGRO COMPANY
18/09/2017	UgC/2017/001665/He/R	RICOPE 2.4-D 72SL	2,4-D Amine 720g/l	MEGHMANI ORGANICS LTD
18/09/2017	UgC/2017/001664/He/R	FALCON 720 SL	2,4-D Amine 720g/l	EXGENTA HONG KONG LIMITED, CHINA
13/09/2017	UgC/2017/001663/In/R	MISILE 44EC	Profenofos 400g/l + Cypermethrin 40g/l	EXCEL CROP CARE LTD, MUMBAI INDIA
13/09/2017	UgC/2017/001662/Fe/R	AXEB 25:22:14	NPK 25:22:14	M/S AXEB BIO TECH, SPAIN
11/09/2017	UgC/2017/001661/In/RR	IMITRUST 200 SC	Imidacloprid 200g/l	KING QUESON INDUSTRY GROUP LTD, CHINA
28/08/2017	UgC/2017/001660/He/RRR	ROUND UP 360 SL	Glyphosate 360g/l	MONSANTO EUROPE
28/08/2017	UgC/2017/001659/In/RR	AMDOCS 3EC	Abamectin 18g/l + Emamectin benzoate 12g/l	SINERIA INDUSTRIES LTD, CYPRUS
24/08/2017	UgC/2017/001658/He/RRR	WEED KILL 360 SL	Glyphosate 360g/l	SINOCHEM SHANGAI Co. LTD
22/08/2017	UgC/2017/001657/In/RRR	KINYVERT	Verticillium lecanii-V17 1X10 ⁸ CFU	KINYARA SUGAR LIMITED
22/08/2017	UgC/2017/001656/In/RRR	KINYBEAU	Beauveria bassiana-Bb 5a 1X10 ⁸ CFU	KINYARA SUGAR LIMITED
22/08/2017	UgC/2017/001655/Fe/RRR	KINYPOTASH	Frateuria aurentia Fa3 1X10 ⁸ CFU	KINYARA SUGAR LIMITED
22/08/2017	UgC/2017/001654/Fe/RRR	KINYACETO	Glucanoacetobacteria	KINYARA SUGAR LIMITED

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Attachment Active List of Registered Pesticides in Uganda

			diazotropicus 1X10 ⁵ CFU	
22/08/2017	UgC/2017/001653/Fe/RRR	KINYBIUM	Rhizobia spp Ks 3 1X10 ⁸ CFU	KINYARA SUGAR LIMITED
21/08/2017	UgC/2017/001652/Fe/RRRRRRR	VEGIMAX		BOON VANIT INTERNATIONAL LTD, BANGKOK THAILAND
01/08/2017	UgC/2017/001651/In/R	CYPERSHI 5EC	Cypermethrin 50g/l	ANHUI ZHONGSHAN INDUSTRY Co LTD, CHINA
28/07/2017	UgC/2017/001650/He/RR	HAOSATE 48SL	Glyphosate 480g/l	AGROHAO Co. LTD, CHINA
14/07/2017	UgC/2017/001649/He/RRRRR	GLYCEL 48SL	Glyphosate 480g/l	EXCEL CROP CARE, INDIA
11/07/2017	UgC/2017/001648/He/R	MOFARNO 160 EC	Quisqualoprop-ethyl 35g/l + Fomesafen 125g/l	SINERIA HOLLAND BV
11/07/2017	UgC/2017/001647/He/R	RUSELL 260 OD	Mesotrione 40g/l + Nicosulfuron 20g/l + Terbutylazine 200g/l	SINERIA HOLLAND BV
11/07/2017	UgC/2017/001646/Fu/R	OTHELLO TOP 325 SC	AZoxystrobin 200g/l + Difenconazole 125g/l	SINERIA HOLLAND BV
11/07/2017	UgC/2017/001645/In/R	ORIZON 120 SC	Acetamidiprid 100g/l + Abamectin 20g/l	SINERIA HOLLAND BV
10/07/2017	UgC/2017/001644/In/RR	TROBAN 48EC	Chlorpyrifos 480g/l	ISAGRO (ASIA) AGROCHEMICAL PVT LTD, INDIA
04/07/2017	UgC/2017/001643/In/R	ACTFORCE 48EC	Chlorpyrifos 480g/l	M/S GHARDA CHEMICALS LTD
04/07/2017	UgC/2017/001642/In/R	NO WORRY 20EC	Chlorpyrifos 200g/l	M/S GHARDA CHEMICALS LTD
04/07/2017	UgC/2017/001641/In/R	CATERPILLAR FORCE 5WG	Emamectin benzoate 50g/Kg	M/S JAT TRADING SHANGAI LTD
04/07/2017	UgC/2017/001640/Fu/R	Z-FORCE 800WP	Mancozeb 800g/Kg	M/S JAT TRADING SHANGHAI LTD
04/07/2017	UgC/2017/001639/In/R	IMIFORCE 200SL	Imidacloprid 200g/l	M/S JIANGSU KESHENG CROP SCIENCE & TECHNOLOGY LTD
29/06/2017	UgC/2017/001638/In/R	ALUPHOS-Z-56	Aluminium phosphide 560g/Kg	M/S ZAGRO SINGAPORE
29/06/2017	UgC/2017/001637/In/R	ZAPYRIFOS 48EC	Chlorpyrifos 480g/l	M/S ZAGRO SINGAPORE
29/06/2017	UgC/2017/001636/He/R	ATRA 500SC	Atrazine 500g/l	MS EXGENTA HONG KONG LTD
29/06/2017	UgC/2017/001635/Fu/R	FALCOZEB 80WP	Mancozeb 800g/Kg	MS EXGENTA HONG KONG LTD
29/06/2017	UgC/2017/001634/In/R	LAMBDEX 5EC	Lambdacyhalothrin 50g/l	MS EXGENTA HONG KONG LTD
29/06/2017	UgC/2017/001633/In/R	CYPERMEX 10EC	Alpha-cypermethrin 100g/l	MS EXGENTA HONG KONG LTD
27/06/2017	UgC/2017/001632/He/R	SUPERIOR 2,4-D AMINE 720SL	2,4-D Amine 720g/l	SINOCHEM, AGRO Co. LTD
27/06/2017	UgC/2017/001631/Fu/R	MANCOZEB PRO 80WP	Mancozeb 800g/Kg	SINOCHEM, AGRO Co. LTD
27/06/2017	UgC/2017/001630/In/R	CLOPSTAR 20 SL	Imidacloprid 200g/l	SINOCHEM, AGRO Co. LTD

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27/06/2017	UgC/2017/001629/In/RR	GOLIATH 0.05% GEL	Fipronil 50g/l	BASF SE, GERMANY
27/06/2017	UgC/2017/001628/In/RR	FENDONA 60SC	Alpha-Cypermethrin 60g/l	BASF SE, GERMANY
27/06/2017	UgC/2017/001627/Fu/RR	ACROBAT 69WG	Dimethomorph 90g/Kg + Mancozeb 600/Kg	BASF SE, GERMANY
27/06/2017	UgC/2017/001626/Fu/RR	DELAN 500 SC	Dithianon 500g/l	BASF SE, GERMANY
27/06/2017	UgC/2017/001625/He/R	GLYPHOSTAR 75.7WG	Glyphosate 75.7g/Kg	ANHUI ZHONGSHAN CHEMICAL Co. LTD, CHINA
27/06/2017	UgC/2017/001624/He/R	AMINEX 2,4-D 72SL	2,4-D Amine salt 720g/l	ANHUI ZHONGSHAN CHEMICAL Co. LTD, CHINA
27/06/2017	UgC/2017/001623/Fu/R	MECCOZSHI 80WP	Mancozeb 800g/kg	ANHUI ZHONGSHAN CHEMICAL Co. LTD, CHINA
27/06/2017	UgC/2017/001622/In/R	CHORPY 48EC	Chlorpyrifos 480g/l	ANHUI ZHONGSHAN CHEMICAL Co. LTD, CHINA
26/06/2017	UgC/2017/001621/He/RR	GREEN 2,4-D 86SL	2,4-D Amine 860g/l	CHANGZHOU WINTAFONE CHEMICAL Co. LTD, CHINA
26/06/2017	UgC/2017/001620/He/RR	GREEN MASTER 48SL	Glyphosate 480g/l	ZHEJIANG XINAN CHEMICAL GROUP LTD, CHINA
19/06/2017	UgC/2017/001619/In/RRR	NIMBECIDINE 0.03EC	Azadirachtin 30g/l	T.STONES & COMPANY LTD
19/06/2017	UgC/2017/001618/Fu/RR	SICOZEB 80WP	Mancozeb 800g/kg	SINOCHEM SHANGHAI Co LTD, CHINA
19/06/2017	UgC/2017/001617/Fu/RR	WINNER 72WP	Metalaxyl 80g/kg + Mancozeb 640g/kg	SINOCHEM SHANGHAI Co LTD, CHINA
19/06/2017	UgC/2017/001616/In/RRRR	MAGIC 50EC	Malathion 500g/kg	BHARAT INSECTICIDE LTD, INDIA
19/06/2017	UgC/2017/001615/Fu/RRRR	EUREKA 72WP	Metalaxyl 80g/kg + Mancozeb 640g/kg	INVECTRA AGRO LTD, CYPRUS
19/06/2017	UgC/2017/001614/In/RRRRR	ASCORIS 48EC	Chlorpyrifos 480g/l	BHAGIRADHA CHEMICAL INDUSTRY LTD, CHINA
19/06/2017	UgC/2017/001613/In/RRRR	AGRITHOATE 40EC	Dimethoate 400g/l	WILLO WOOD LIMITED, HONGKONG
19/06/2017	UgC/2017/001612/He/RRRRR	WILLOSATE 36SL	Glyphosate 360g/l	WILLO WOOD LIMITED, HONGKONG
19/06/2017	UgC/2017/001611/In/RRRR	AGRILLIC SUPER 1.9DP	Pirimiphos methyl 16g/kg + Permethrin 3g/kg	WILLO WOOD LIMITED, HONGKONG
19/06/2017	UgC/2017/001610/Fu/RRRRR	ASCOZEB 80WP	Mancozeb 800g/kg	WILLO WOOD LIMITED,

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Attachment Active List of Registered Pesticides in Uganda

				HONGKONG
14/06/2017	UgC/2017/001609/He/RRRRRR	KALACH 360SL	Glyphosate 360g/l	CALLIOPE GROUP ARYSTA LIFE SC. FRANCE
30/06/2017	UgC/2017/001608/In/RR	DDV HAO 100EC	Dichlorvos 1000g/l	AGROHAO COMPANY LTD, CHINA
30/05/2017	UgC/2017/001607/In/RR	HAOPYRIFOS 48EC	Chlorpyrifos 480g/l	AGROHAO COMPANY LTD, CHINA
30/05/2017	UgC/2017/001606/In/RR	HAOTHOATE 40EC	Dimethoate 400g/l	AGROHAO COMPANY LTD, CHINA
30/05/2017	UgC/2017/001605/He/RR	HAOTACHLOR 95EC	Butachlor 60% + Propanil 35%	AGROHAO COMPANY LTD, CHINA
30/05/2017	UgC/2017/001604/He/RR	HAO 2,4-D 72SL	2,4-D Amine Salt 720g/l	AGROHAO COMPANY LTD, CHINA
30/05/2017	UgC/2017/001603/In/RRRR	OXYMATRINE 2.4SL	Prosular oxymatrine 24g/l	FLUENCE MIDDLE E.A LTD, CYPRUS
29/05/2017	UgC/2017/001602/He/RRRRR	PIN-UP 48SL	Glyphosate 410g/l	AGSIN SINGAPORE PTE LTD
24/05/2017	UgC/2017/001601/He/R	AQUARICE 60EC	Propanil 200g/l + Thiobencarb 400g/l	M/S HAJLIR PESTICIDE CHEMICALS Co. LTD CHINA
08/05/2017	UgC/2017/001600/Fu/RRRR	VICTORY 72WP	Mancozeb 640g/kg + Metalaxyl 80g/kg	INVECTRA AGRO CYPRUS
08/05/2017	UgC/2017/001599/He/R	AMINOFORCE 720 SL	2,4-D Amine salt 720g/l	JIANGSU HUIFENG AGROCHEMICALS
08/05/2017	UgC/2017/001598/He/R	MAIZE SUCCEED 26% OD	Mesotrione 4% + Nicosulfuron 2% + Atrazine 20%	SHANDONG BINNONG TECHNOLOGY LTD
05/05/2017	UgC/2017/001597/Fu/R	DACONIL	Chlorothalonil 720g/l	SYNGENTA AGRO AG, SWITZERLAND
05/05/2017	UgC/2017/001596/In/R	PROCLAIM FIT UV 045 WG	Emamectin benzoate 50g/kg + Lufenuron 400g/kg	SYNGENTA AGRO AG, SWITZERLAND
21/04/2017	UgC/2017/001595/He/RR	WEEDEX	Glyphosate-Isopropyl amine salt 480g/l	SHENZHEN KING QUESON CHEMICAL INDUSTRY Co. LTD CHINA
19/04/2017	UgC/2017/001594/He/R	AGROSATE 75.5SG	Glyphosate Ammonium salt 755g/kg	ASIATIC AGRICULTURAL INDUSTRIES PTE LTD
19/04/2017	UgC/2017/001593/In/R	BRAVO 20SL	Imidacloprid 200g/l	ZAGRO SINGAPORE PTE LTD
19/04/2017	UgC/2017/001592/In/R	BOOM SUPER 100EC	Dichlorvos 1000g/l	ZAGRO SINGAPORE PTE LTD

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12/04/2017	UgC/2017/001591/In/RRRRRRRRRR	DURSBAN 4E	Chlorpyrifos Ethyl 480g/l	DOW AGROSCIENCE, FRANCE
12/04/2017	UgC/2017/001590/He/R	CLEANFORCE 500SC	Ametryn 500g/l	SHANDONG BINNONG TECHNOLOGY Co. LTD, CHINA
07/04/2017	UgC/2017/001589/Fe/R	MAXIFORCE	NPK 20-20-20 + TE	ASTRA INDUSTRIAL COMPLEX Co. LTD
07/04/2017	UgC/2017/001588/Ro/R	PUSH OUT 80WWW	Zinc phosphide 80% W/W	SANDHYA ORGANIC CHEMICALS Pvt. LTD
07/04/2017	UgC/2017/001587/In/R	DIMEFORCE 40EC	Dimethoate 400g/l	JIANGSU TENGLONG BIOLOGICAL AND MEDICAL Co. LTD
07/04/2017	UgC/2017/001586/In/R	DDFORCE 1000EC	Dichlorvos 1000g/l	HUBEI SANONDA Co. LTD 93, EAST BEIJING RD, JINGZHOU HUBEI 434001, CHINA
07/04/2017	UgC/2017/001585/He/RRRRRRRRR	MAMBA 36SL	Glyphosate 360g/l	DOW AGROSCIENCE, FRANCE
07/04/2017	UgC/2017/001584/In/RRR	LAVA 100EC	Dichlorvos 100%	SABERO ORGANICS LTD, GUJARAT, INDIA
07/04/2017	UgC/2017/001583/In/RRRRR	RALOTHRIN	Cypermethrin 50g/l	RALLIS LTD, INDIA
05/04/2017	UgC/2017/001582/Fu/R	SPEAR 50WP	Copper oxychloride 500g/kg	M/S SHENSHEN KING QUENSON INDUSTRY, CO LTD
05/04/2017	UgC/2017/001581/He/R	GLYPHOTEX 480SL	Glyphosate 480g/l	M/S ANHUI ZHONGSHAU CHEMICALS Co. LTD
22/03/2017	UgC/2017/001580/In/RRR	HIPOWER 5EC	Cypermethrin 50g/l	SULPHUR MILLS LTD, INDIA
22/03/2017	UgC/2017/001579/In/RRR	SULMATHION 50EC	Malathion 500g/kg	SULPHUR MILLS LTD, INDIA
22/03/2017	UgC/2017/001578/Fu/RRR	MANCO 80WP	Mancozeb 800g/kg	SULPHUR MILLS LTD, INDIA
17/03/2017	UgC/2017/001577/Fg/RRRR	CELPHOS 56	Aluminium phosphide 560g/kg	EXCEL CROP CARE LTD, INDIA
16/03/2017	UgC/2017/001576/Fu/R	AMISTAR XTRA 280SC	Cyproconazole 80g/l + Azoxystrobin 200g/l	M/S SYNGENTA AGRO AG, SWITZERLAND
16/03/2017	UgC/2017/001575/In/RR	FASTAC 100EC	Alpha_cypermethrin 100g/l	BASF SE
13/03/2017	UgC/2017/001574/Fe/R	ULTRASAL	NPK 8-0-0 + 14.5 CaO	SENFA TARIMSAL URUNLER LTD, TURKEY
13/03/2017	UgC/2017/001573/Fe/R	FLORA FA	18-18-18 + TE	SENFA TARIMSAL URUNLER LTD, TURKEY
13/03/2017	UgC/2017/001572/Fe/R	FLORA FA	NPK 15-5-30 + TE	SENFA TARIMSAL URUNLER LTD, TURKEY
13/03/2017	UgC/2017/001571/Fe/R	FLORA FA	NPK 15-30-15 + TE	SENFA TARIMSAL URUNLER LTD, TURKEY

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Attachment Active List of Registered Pesticides in Uganda

07/03/2017	UgC/2017/001570/In/R	KU-KILL 48EC	Chlorpyrifos 480g/l	AGRO CARE CHEMICAL INDUSTRY Co LTD, CHINA
07/03/2017	UgC/2017/001569/He/RR	RICAL 345EC	Propanil 230g/l + Thiobencarb 115g/l	ARYSTA LIFE SCIENCE, KENYA
07/03/2017	UgC/2017/001568/He/RR	KALACH EXTRA 70SG	Glyphosate 700g/kg	ARYSTA LIFE SCIENCE, KENYA
07/03/2017	UgC/2017/001567/In/RR	TITAN 25EC	Acetamiprid 250g/l	ARYSTA LIFE SCIENCE, KENYA
07/03/2017	UgC/2017/001566/In/RR	MOSPILAN 200SP	Acetamiprid 200g/l	ARYSTA LIFE SCIENCE, KENYA
07/03/2017	UgC/2017/001565/Fu/RR	BANKO 500SC	Chlorothalonil 500g/l	ARYSTA LIFE SCIENCE, KENYA
07/03/2017	UgC/2017/001563/He/RR	TWIGA GLYPHOSATE 360SL	Glyphosate 360g/l	VOLCANO AGRO-SCIENCE (PTY) COMPANY LTD, SOUTH AFRICA
07/03/2017	UgC/2017/001562/In/RRRR	CYPERCAL P720	Profenofos 600g/l + Cypermethrin 120g/l	CALLIOPE GROUPE, ARYSTA LIFE SCIENCE
07/03/2017	UgC/2017/001561/He/RRRRRR	SATUNIL 60EC	Thiobencarb 40% + Propanil 20%	TOMEN CORPORATION, JAPAN
06/03/2017	UgC/2017/001560/In/R	AFRI-CYPER 5EC	Cypermethrin 50g/l	ANHUI RUIFENG AGROCHEMICALS Co LTD
06/03/2017	UgC/2017/001559/In/R	KERLAN 25WG	Thiamethoxam 250g/kg	HAMASHBIR, ISREAL
27/02/2017	UgC/2017/001558/In/RRR	HITCEL 44EC	Profenofos 400g/l + Cypermethrin 40g/l	EXCEL CROP CARE LTD, INDIA
27/02/2017	UgC/2017/001557/In/RRR	TWIGA LACE 100EC	Lamdda cyhalothrin 60g/l + Acetamiprid 40g/l	VOLCANO AGRO-SCIENCE (PTY) COMPANY LTD, SOUTH AFRICA
27/02/2017	UgC/2017/001556/He/RRR	TWIGA 2,4-D AMINE	2,4-D Amine 720g/l	ATUL LTD, AGROCHEMICAL DIVISION, INDIA
27/02/2017	UgC/2017/001555/In/RRRRRRR	ACTELIC SUPER 1.9%	Primiphos methyl 1.6% + Permethrin 0.3%	SYNGENTA EAST AFRIA
27/02/2017	UgC/2017/001554/In/RRRRR	TWIGATHOATE 40EC	Dimethoate 400g/l	THE NATIONAL Co FOR AGROCHEMICALS PRODUCTION, ALEXANDRIA, EGYPT
27/02/2017	UgC/2017/001553/He/RRRRR	TWIGA GLYPHOSATE 36SL	Glyphosate 360g/l	VOLCANO AGRO-SCIENCE (PTY) COMPANY LTD, SOUTH AFRICA
27/02/2017	UgC/2017/001552/In/RRRRR	TWIGA CYPER	Cypermethrin 50g/l	AGROCHEM ALEXANDRIA, EGYPT
27/02/2017	UgC/2017/001551/In/RRRRR	TWIGA MALATHION 57EC	Malathion 570g/l	AGROCHEM ALEXANDRIA, EGYPT

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15/02/2017	UgC/2017/001550/In/RRR	TRICEL 48EC	Chlorpyrifos 480g/l	EXCEL CROP CARE, INDIA
14/02/2017	UgC/2017/001549/In/R	DELTAMET 1%EC	Deltamethrin 10g/l	ASCOT INTERNATIONAL STOCKPORT, UNITED KINGDOM
09/02/2017	UgC/2017/001548/He/RR	WIPE OUT 36SL	Glyphosate 360g/l	M/S ALMANDINE CORPORATION, SWITZERLAND
09/02/2017	UgC/2017/001547/In/RR	MOS-N-ROACH 100EC	Alphacypermethrin 100g/l	M/S FMC CORPORATION PHILADELPHIA USA
09/02/2017	UgC/2017/001546/He/R	EXCEL SPEED 71SG	Ammonium Salt of Glyphosate 710g/kg	M/S EXCEL CROP CARE LIMITED, INDIA
09/02/2017	UgC/2017/001545/Ro/R	MESSE PHOS	Zinc phosphide 80% W/W	M/S EXCEL CROP CARE LIMITED, INDIA
09/02/2017	UgC/2017/001544/In/R	CELPHIDE 57%	Aluminium phosphide 570g/kg	M/S EXCEL CROP CARE LIMITED, INDIA
09/02/2017	UgC/2017/001543/Fu/RR	MANCOLAX 72WP	Mancozeb 64% + Metalaxyl 8%	M/S UNITED PHOSPHORUS MUMBAI, INDIA
09/02/2017	UgC/2017/001542/Fe/RR	FOSPHITE 53SL	Monopotassium phosphate 34% + Dipotassium phosphate 19%	M/S JH BIOTECH INCORPORATION USA
03/02/2017	UgC/2017/001541/He/RRRR	LASSET GD	Acetochlor 41% + Terbutylazine 19%	MONSANTO EUROPE NV
03/02/2017	UgC/2017/001540/He/RRRR	ROUNDUP-TURBO 480SL	GLyphosate 480g/l	MONSANTO EUROPE NV
02/02/2017	UgC/2017/001539/In/RR	BESTOX (DOMINEX)	Alphacypermethrin 100g/l	JUANCO SPS LTD NAIROBI, KENYA
02/02/2017	UgC/2017/001538/In/RR	BRIGADE (TAL-STAR)	Bifenthrin 2.5%	JUANCO SPS LTD NAIROBI, KENYA
19/01/2017	UgC/2017/001537/He/R	AMEGA 50 SC	Ametryn 500g/l	NINGBO MEGAGRO CHEMICALS Co. LTD
19/01/2017	UgC/2017/001536/Fu/R	MANCODEX SUPER 72WP	Mancozeb 640g/kg + Metalaxyl 80g/kg	NINGBO MEGAGRO CHEMICALS Co. LTD
16/01/2017	UgC/2017/001535/Fe/RR	KINYPHOS	Bacillus megaterium var. phosphaticum PB (1x10 ⁸) ml/l	KINYARA SUGAR LIMITED
16/01/2017	UgC/2017/001534/Fe/RR	KINYAZOTO	Azotobactor chroococum AC (1x10 ⁸) CFU/ml	KINYARA SUGAR LIMITED
16/01/2017	UgC/2017/001533/Fe/RR	KINYSPIRILLUM	Azospirillum spp SP7 (1x10 ⁸) ml/l	KINYARA SUGAR LIMITED

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16/01/2017	UgC/2017/001532/In/RR	KINYMET	<i>Metarrhizium anisopliae</i> (1x10 ⁶) CFU/ml	KINYARA SUGAR LIMITED
16/01/2017	UgC/2017/001531/Fu/RR	KINYDERMA	<i>Trichoderma viride</i> Tv-6 (1x10 ⁶) CFU/ml	KINYARA SUGAR LIMITED
16/01/2017	UgC/2017/001530/Ba/RR	KINYMONAS	<i>Pseudomonas fluorescens</i> PF-19 (1x10 ⁶) CFU/ml	KINYARA SUGAR LIMITED
12/01/2017	UgC/2017/001529/He/RRRRRR	KALACH 480SL	Glyphosate 360g/l	M/S ARYSTA LIFE SCIENCE LTD, CHINA
12/01/2017	UgC/2017/001528/He/RRR	WEED UP 48SL	Glyphosate 480g/l	WE-YOUNG INDUSTRIAL TRADING Co. LTD, CHINA
12/01/2017	UgC/2017/001527/He/RRR	TOUCH UP 48SL	Glyphosate 480g/l	NINGBO FREE TRADE ZONE, CHINA
12/01/2017	UgC/2017/001526/He/R	KYEBE AMINE 720SL	2,4-D Amine 720g/l	M/S IPROCHEM COMPANY LTD, CHINA
12/01/2017	UgC/2017/001525/In/R	SOCKET PLUS 85 EC	Profenofos 40% + Cypermethrin 45%	M/S IPROCHEM COMPANY LTD, CHINA
10/01/2017	UgC/2017/001524/He/R	MAXIMUS 537.5SC	Metalachor 375g/l + Terbutylazine 125g/l + Mesotrione 37.5g/l	SINERIA INDUSTRIES LTD, CHINA
10/01/2017	UgC/2017/001523/He/R	DIZURON 450EC	Pendimethalin 300g/l + Clomazone 150g/l	SINERIA INDUSTRIES LTD, CHINA
10/01/2017	UgC/2017/001522/He/RRR	AMETREX 500SL	Ametryn 500g/l	HANGHAZOUS CHEMICAL IND LTD, CHINA
10/01/2017	UgC/2017/001521/He/RRR	WEED ALL 480SL	Glyphosate 480g/l	HANGHAZOUS CHEMICAL IND LTD, CHINA
10/01/2017	UgC/2017/001520/He/R	CLEAR 2,4-D 720SL	2,4-D Amine salt 720g/l	M/S SUNFARM AGROCHEMICALS LTD, CHINA
03/01/2017	Ugc/2016/001519/He/RR	ROUND UP TURBO 450 SL	Glyphosate 450g/l	MONSANTO EUROPE NV
23/12/2016	Ugc/2016/001518/He/R	BUTAFORCE 50 EC	Butachlor 500g/l	SHANDONG BINNONG TECHNOLOGY CO. LTD, CHINA
22/12/2016	Ugc/2016/001517/In/R	PROFEX SUPER 44 EC	Cypermethrin 4% + Profenofos 40%	M/S EXGENTA HONG KONG LTD, CHINA
22/12/2016	Ugc/2016/001516/In/R	MECTIN 18 EC	Abamectin 180g/l	M/S EXGENTA HONG KONG LTD, CHINA
16/12/2016	Ugc/2016/001515/He/R	PRIME 2,4-D AMINE 720SL	2,4-D Amine 720g/l	M/S YUSULL INDUSTRY Co, LTD,

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				CHINA
14/12/2016	Ugc/2016/001514/Fe/RR	PHOSGARD PLUS	NPK + Mg + Bo + Zn + Fe+ Mo + Co	M/S JUANCO SPS LTD, NAIROBI, KENYA
14/12/2016	Ugc/2016/001513/Fe/RR	SUGAR-MOVER	Bo 8% + 0.004% + Inert 91.986%	STOLLER ENTERPRISES, USA
14/12/2016	Ugc/2016/001512/Fe/RR	SETT-ENHANCED	Ca 8% + Bo 1% + Inert 91%	STOLLER ENTERPRISES, USA
14/12/2016	Ugc/2016/001511/Fe/RR	BIO-FORGE	(N 2% + K 3% + Inert 95%)	STOLLER ENTERPRISES, USA
12/12/2016	Ugc/2016/001510/In/RRRR	FUMAPHOS	Aluminium phosphide 560g/kg	M/S NATIONAL FUMIGATIONS LTD, SOUTH AFRICA
07/11/2016	Ugc/2016/001509/He/R	WEEDTRYN 500SC	Ametryn 500g/l	AGROHAO COMPANY LTD, CHINA
07/11/2016	Ugc/2016/001508/He/R	AGRO 2,4-D 720SL	2,4-D Amine 720g/l	AGROHAO COMPANY LTD, CHINA
07/11/2016	Ugc/2016/001507/He/R	WEED BEST 48SL	Glyphosate 480g/l	AGROHAO COMPANY LTD, CHINA
27/10/2016	Ugc/2016/001506/He/RRR	GREEN FIRE 50SL	Glyphosate 480g/l	LIMIN CHEMICALS LTD, JIANSU CHINA
27/10/2016	Ugc/2016/001505/Fu/RRRRRR	GREENZEB 80WP	Mancozeb 800g/l	LIMIN CHEMICALS LTD, JIANSU CHINA
26/10/2016	Ugc/2016/001504/In/RR	VAPO 85EC	Dichlorvos 850g/l	CHANGZHOU EASTCHEM INTERNATIONAL CO. LTD
26/10/2016	Ugc/2016/001503/In/RR	SUPERCYPER 5EC	Cypermethrin 50g/l	CHANGZHOU EASTCHEM INTERNATIONAL CO. LTD
26/10/2016	Ugc/2016/001502/In/RR	SUPAETHOATE 40EC	Dimethoate 400g/l	CHANGZHOU EASTCHEM INTERNATIONAL CO. LTD, CHINA
24/10/2016	Ugc/2016/001501/In/RRR	SHUMBA SUPER 55EC	Fenitrothion 50% + Deltamethrin 5%	ECOMED MANUFACTURING LTD ZIMBABWE
24/10/2016	Ugc/2016/001500/In/RRR	SHUMBA SUPER GRAIN PROTECTANT	Fenitrothion 1.0% + Deltamethrin 0.13%	ECOMED MANUFACTURING LTD ZIMBABWE
04/10/2016	Ugc/2016/001499/Fe/RR	MAGICGRO	NPK 11:8:6+ 0.2%	M/S JUANCO SPS LTD, NAIROBI KENYA
04/10/2016	Ugc/2016/001498/Fe/RR	T-FOLIAR SPS	NPK 20:5:5+ MgO+ 5S+TE	M/S JUANCO SPS LTD, NAIROBI KENYA
04/10/2016	Ugc/2016/001497/Fe/RR	SYNERGIZER	NPK 8:32:4+ Mg, Fe, Cu, Mn, Zn, B, Mo, Cu and S	M/S JUANCO SPS LTD, NAIROBI KENYA
21/09/2016	Ugc/2016/001496/In/R	TIHAN 175 OD	Flubendiamide 100g/l + Spirotetramat 75g/l	BAYER CROP SCIENCE AG GERMANY

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21/09/2016	Ugc/2016/001495/Fu/R	LUNA SENSATION 500SC	Fluopyram 250g/l + Trifloxystrobin 250g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001494/Fu/R	ZANTARA 216EC	Bixafen 50g/l + Tebuconazole 166g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001493/In/R	OBERON SPEED 240SC	Spiromesifen 228.6g/l + Abemectin 11.4g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001492/Fu/R	INFINITO 687.5 SC	Fluopicolide 62.5g/l + Propamocarb hydrochloride 625g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001491/He/R	HUSKIE 256EC	Pyrasulfotole 36g/l + Bromoxynil 211g/l + Mefenpyr 9g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001490/He/R	SENCOR PLUS 517.5 SC	Indaziflam 37.5g/l + Metribuzin 480g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001489/He/R	ADENGO 465SC	Iso-xaflutole 22g/l + Thien-carbazone 90g/l + Safener (Cyprosulfamide) 50g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001488/In/R	VELUM 500 SC	Fluopyram 500g/l	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001487/In/R	K-OBIOL DP2	Deltamethrin 2g/kg	BAYER CROP SCIENCE AG GERMANY
21/09/2016	Ugc/2016/001486/Fu/RRR	TATA MASTER 720WP	Mancozeb 640g/kg + Mancozeb 80g/kg	RALLIS INDIA
21/09/2016	Ugc/2016/001485/In/RRRRR	MALATAF 57EC	Malathion 570g/l	RALLIS INDIA
21/09/2016	Ugc/2016/001484/In/RRRRR	TAFGOR 40EC	Dimethoate 400g/l	RALLIS INDIA
19/09/2016	Ugc/2016/001481/He/RR	NYO 2,4-D AMINE	24-D Amine 720g/l	CROPSTAR CHEMICAL INDUSTRY Co. CHINA
19/09/2016	Ugc/2016/001480/In/R	MERIFOS 480SL	Chlorpyrifos 480g/l	NINGBO MEGAGRO CHEMICAL Co. LTD, CHINA
19/09/2016	Ugc/2016/001479/In/R	ALPHAKILL 100EC	Alpha-cypermethrin 100g/l	NINGBO MEGAGRO CHEMICAL Co. LTD, CHINA
19/09/2016	Ugc/2016/001478/In/R	MACLOPRID 200SL	Imidacloprid 200g/l	NINGBO MEGAGRO CHEMICAL Co. LTD, CHINA
19/09/2016	Ugc/2016/001477/In/R	MAMBDA 50EC	Lambda-cyhalothrin 500g/l	NINGBO MEGAGRO CHEMICAL Co. LTD, CHINA
19/09/2016	Ugc/2016/001476/In/R	MAMECTIN 5%WG	Emamectin benzoate 50g/kg	NINGBO MEGAGRO CHEMICAL Co. LTD, CHINA

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14/09/2016	Ugc/2016/001475/In/RR	ULTRAPHOS 56	Aluminium phosphide 560g/kg	UNITED PHOSPHORUS INDIA
14/09/2016	Ugc/2016/001474/Fu/RR	UNIZEB 80WP	Mancozeb 800g/kg	UNITED PHOSPHORUS INDIA
08/09/2016	Ugc/2016/001473/GP/R	NUGRO(CHITOSAN)	N.P.K 1:5:5 + Trace elements	M/S ENVIRO CLEAN ENERGY SDN BHD MALAYSIA
06/09/2016	Ugc/2016/001472/In/RR	ACTARA 25WG	Thiamethoxam 250g/kg	SYNGENTA AGRO CROP
29/08/2016	Ugc/2016/001471/He/R	ASCOSATE 480SL	Glyphosate 480g/l	SHANGHAI HUI SONG (H&S), AGRO-SOLUTION
29/08/2016	Ugc/2016/001470/He/R	WEEDMASTER 75.7XL WG	Glyphosate Ammonium salt 757g/kg	SHANGHAI HUI SONG (H&S), AGRO-SOLUTION
29/08/2016	Ugc/2016/001469/In/R	DUDU ACELEMECTIN 4.8EC	Abamectin 18g/l + Acetamiprid 30g/l	SHANGHAI HUI SONG (H&S), AGRO-SOLUTION
29/08/2016	Ugc/2016/001468/In/R	STRIKER 247SC	Lambda-cyhalothrin 106g/l + Thiomethoxam 141g/l	KING TECH CORPORATION SHENZHEN, CHINA
29/08/2016	Ugc/2016/001467/In/R	SUPER MALATHION 57EC	Malathion 570g/l	IPOCHEM CO. LTD, CHINA
25/08/2016	Ugc/2016/001466/In/RR	DICHLORBEX 100EC	Dichlorvos 1000g/l	NANJING LIMIN Co. LTD
25/08/2016	Ugc/2016/001465/In/RR	CYMEBEX 5EC	Cypermethrin 50g/l	NANJING LIMIN Co. LTD
25/08/2016	Ugc/2016/001464/In/RR	DIMETHOBEX 40EC	Dimethoate 400g/l	NANJING LIMIN Co. LTD
25/08/2016	Ugc/2016/001463/He/RR	GLYPHOBEX 360SL	Glyphosate 360g/l	NANJING LIMIN Co. LTD
25/08/2016	Ugc/2016/001462/In/RR	PYRIBEX 48EC	Chlorpyrifos 480g/l	NANJING LIMIN Co. LTD
25/08/2016	Ugc/2016/001461/Fu/RR	MANCOBEX 80WP	Mancozeb 800g/kg	NANJING LIMIN Co. LTD, CHINA
24/08/2016	Ugc/2016/001460/He/R	WEED SOLUTION 11 74.7SG	Glyphosate Ammonium salt 747g/kg	M/S SINOCEM AGRO Co. LTD, CHINA
24/08/2016	Ugc/2016/001459/He/R	WEEDSOLUTION1 41SL	Glyphosate IPA 480g/l	M/S SINOCEM AGRO Co. LTD, CHINA
12/08/2016	Ugc/2016/001458/Fu/R	COMMANDER 70WP	Propineb 700g/kg	MS SHENZHEN KING WING CHEMICAL INDUSTRY Co. LTD, CHINA
12/08/2016	Ugc/2016/001457/In/R	TRUST DELTA 2.5EC	DELTAMETHRIN 25g/l	MS SHENZHEN KING WING CHEMICAL INDUSTRY Co. LTD, CHINA
29/07/2016	Ugc/2016/001456/In/R	TRIDELTA 360EC	Triazophos 350g/kg + Deltamethrin 10g/kg	DVA AGRO GmbH, GERMANY
28/07/2016	Ugc/2016/001455/Fu/RRRRRRR	RIDOMIL GOLD 68WG	Mancozeb 640g/kg + Mancozeb 40g/l	SYNGENTA CROP PROTECTION BASEL, SWITZERLAND
28/07/2016	Ugc/2016/001454/He/RRRR	LUMAX	<i>S-Metolachlor</i> 375g/l +	SYNGENTA CROP PROTECTION

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			Terbutylazine 125g/l + Mesotrion 37.5g/l	BASEL, SWITZERLAND
19/07/2016	Ugc/2016/001453/In/RRRRRR	PYRINEX 48EC	Chlorpyrifos 480g/l	ADAMA MAKHTESHIM CHEM, ISREAL
19/07/2016	Ugc/2016/001452/Fe/RR	DI-GROW (RED)		HERBAL MEDICAL WORKS SBN BHN FULAUPENANG, MALAYSIA
11/07/2016	Ugc/2016/001451/He/RRRR	FUSILADE FORTE	Fluazifop-P-butyl 150g/l	SYNGENTA CROP PROTECTION BASEL
11/07/2016	Ugc/2016/001450/Fu/RRRR	APRON STAR	Difenoconazole 2% + Thiamethoxam 20% + Metalaxyl-M 20%	SYNGENTA CROP PROTECTION BASEL, SWITZERLAND
11/07/2016	Ugc/2016/001449/Fu/RRRRR	MAXIM XK 035FS	Fludioxonil + Metalaxyl	SYNGENTA CROP PROTECTION BASEL
11/07/2016	Ugc/2016/001448/He/RRRRRRR	PRIMAGRAM GOLD 660SC	Atrazine 370g/l + S-Metolachlor 290g/l	SYNGENTA CROP PROTECTION BASEL, SWITZERLAND
20/06/2016	Ugc/2016/001447/Fu/RRR	NORDOX SUPER 75WP	Copper oxychloride 750g/kg	NORDOX INDUSTRIES, NORWAY
20/06/2016	Ugc/2016/001446/In/RRR	GOLAN 200SP	Acetamiprid 200g/kg	SINERIA INDUSTRY LTD, HOLLAND
13/06/2016	Ugc/2016/001445/In/R	TERMIDOR 96SC	FIPRONIL 96%	BASF SE, GERMANY
23/05/2016	Ugc/2016/001444/He/R	GLYMARK 360SL	Glyphosate 360g/l	NINGBO SYNAGROCHEM CO. LTD, CHINA
20/05/2016	Ugc/2016/001443/He/R	AMESAC 500SC	Ametryn 500g/l	NINGBO SYNAGROCHEM CO. LTD, CHINA
20/05/2016	Ugc/2016/001442/He/R	SACOD 720SL	2,4-D Amine salt	NINGBO SYNAGROCHEM CO. LTD, CHINA
20/05/2016	Ugc/2016/001441/He/R	MEPANIL 360EC	Propanil 360g/l	NINGBO MEGASRO CHEMICAL Co. LTD
20/05/2016	Ugc/2016/001440/He/R	MESORA 550SC	Mesotrione 5% + Atrazine 50%	NINGBO MEGASRO CHEMICAL Co. LTD
20/05/2016	Ugc/2016/001439/Fu/R	REVUS 250SC	Mandipropamid 250g/l	SYNGENTA AGRO AG, SWITZERLAND
20/05/2016	Ugc/2016/001438/Fu/R	QUADRIS 50WG	Azoxystrobin 500g/kg	SYNGENTA AGRO AG, SWITZERLAND
20/05/2016	Ugc/2016/001437/In/R	VOLIAM FLEX 300SC	Chlorantraniliprole 100g/l + Thiamethoxam 200g/l	SYNGENTA AGRO AG, SWITZERLAND
20/05/2016	Ugc/2016/001436/In/R	ENGEO 247SC	Thiamethoxam 141g/l +	SYNGENTA AGRO AG.

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			Lambdacyhalothrin 106g/l	SWITZERLAND
16/05/2016	Ugc/2016/001435/In/RRRR	AGRO-DETHRIN 2.5EC	Deltamethrin 25g/l	ASIATIC AGRICULTURAL INDUSTRY
16/05/2016	Ugc/2016/001434/He/RRRR	AGRO-SUPANIL 60EC	Thiobencarb 400g + Propanil 200g/l	ASIATIC AGRICULTURAL INDUSTRY
16/05/2016	Ugc/2016/001433/He/RRRR	AGRO-STUMP 330EC	Pendimethalin 330g/l	ASIATIC AGRICULTURAL INDUSTRY
16/05/2016	Ugc/2016/001432/In/RRRR	VALUE 5EC	Cypermethrin 50g/l	ASIATIC AGRICULTURAL INDUSTRY
16/05/2016	Ugc/2016/001431/In/RRRR	AGRO-LAMBACIN 3.5EC	Lambda_cyhalothrin 30g/l + Profenofos 5g/l	ASIATIC AGRICULTURAL INDUSTRY
16/05/2016	Ugc/2016/001430/In/RRRR	AGRO-ALPHACYPEX 10EC	AlphaCypermethrin 100g/l	ASIATIC AGRICULTURAL INDUSTRY
16/05/2016	Ugc/2016/001429/In/R	MUPA DUST	Fenitrothion 10g/kg + Deltamethrin 1.3g/kg	SINERIA, HOLLAND
06/05/2016	Ugc/2016/001411/He/R	WEED CLEAR 480SL	Glyphosate IPA 480g/l	SUNFARM AGROCHEMICAL LTD, CHINA
05/05/2016	Ugc/2016/001410/He/R	HIPPO 480EC	Triclopyr 480g/l	DVA AGRO GmbH GERMANY
05/05/2016	Ugc/2016/001409/He/R	ROUND 75.5 SG	Glyphosate 755g/kg	DVA AGRO GmbH GERMANY
05/05/2016	Ugc/2016/001408/Fu/R	METAZEB 72WP	Mancozeb 640g/Kg + Metalaxyl 80g/kg	HARANBA INDUSTRIES LTD, INDIA
05/05/2016	Ugc/2016/001407/In/R	ATTACK 5EC	Cypermethrin 50g/l	HARANBA INDUSTRIES LTD, INDIA
29/04/2016	Ugc/2016/001401/He/R	SLASH 720SL	2,4-D Amine 720g/l	HAILIR PESTICIDES CHEMICAL GROUP CO. LTD CHINA
29/04/2016	Ugc/2016/001400/He/R	WEEDBAN 480SL	Glyphosate IPA 41%SLI	HAILIR PESTICIDES CHEMICAL GROUP CO. LTD CHINA
27/04/2016	Ugc/2016/001394/BCA/R	ENTONEM	<i>Steinemema feltiae</i>	KOPPERT BIOLOGICAL SYSTEM
27/04/2016	Ugc/2016/001393/BCA/R	SWIRSKI-MITE	<i>Amblyseius swirskii</i>	KOPPERT BIOLOGICAL SYSTEM
27/04/2016	Ugc/2016/001392/BCA/R	SPICAL	<i>Amblyseius californicus</i>	KOPPERT BIOLOGICAL SYSTEM
27/04/2016	Ugc/2016/001391/BCA/R	SPIDEX	<i>Phytoseiulus persimilis</i>	KOPPERT BIOLOGICAL SYSTEM, NETHERLANDS
14/04/2016	Ugc/2016/001390/Fu/R	HARVESTER 72.2	Propamocarb hydrochloride 72.2%	M/S SHANGAI CHINA
14/04/2016	Ugc/2016/001389/Fu/R	TOPLITE 70WP	Thiophanate methyl 200g/kg +	KING TECH CORPORATION

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Attachment Active List of Registered Pesticides in Uganda

			Maneb 500g/kg	
14/04/2016	Ugc/2016/001388/Fu/R	FANGOCIL 72WP	Mancozeb 640g/kg + Metalaxyl 80g/kg	KING TECH CORPORATION
14/04/2016	Ugc/2016/001387/In/R	DUDU GUARD 20SC	Carbosulfan 200g/l	KING TECH CORPORATION
14/04/2016	Ugc/2016/001386/DTB/R	ZEROFLY STORAGE BAG	Deltamethrin	VESTERGARD FRANDSEN EAST AFRICA LTD
11/04/2016	Ugc/2016/001383/In/R	SUPA PROFENOFOS 44EC	Profenofos 400g/l + Cypermethrin 40g/l	HANGZHOU QINGFENG AGROCHEMICAL COMPANY LTD
11/04/2016	Ugc/2016/001382/In/R	SUPA DICHLORVOS 1000EC	Dichlorvos 1000g/l	HANGZHOU QINGFENG AGROCHEMICAL COMPANY LTD
11/04/2016	Ugc/2016/001381/He/R	SUPA MAX 75.5WDG	Glyphosate 755g/kg	HANGZHOU QINGFENG AGROCHEMICAL COMPANY LTD
06/04/2016	Ugc/2016/001380/He/R	CLEAR FORCE 500SL	Glyphosate 250g/l + Diuron 250g/l	ANHILL ZHONGSHEN CHEMICAL INDUSTRY CO. LTD, CHINA
06/04/2016	Ugc/2016/001379/In/R	LARA FORCE 25g/IEC	Lambda cyhalothrin 25g/l EC	NANJING RED SUN CO. LTD, CHINA
06/04/2016	Ugc/2016/001378/He/R	FORCE UP	Glyphosate 480g/l	ZHEJIANG JINJANDA BIOCHEMICAL CO. LTD
06/04/2016	Ugc/2016/001377/Fu/R	SECRET 80WP	Tricyclazole 180g/l + 620g/l	HERENBA INDUSTRIES, LTD, INDIA
06/04/2016	Ugc/2016/001376/Fu/R	PROXY 25EC	Propiconazole 250g/l	HERENBA INDUSTRIES, LTD, INDIA
06/04/2016	Ugc/2016/001375/In/R	ASCORON 25WP	Diflubenzuron 250g/kg	HERENBA INDUSTRIES, LTD, INDIA
06/04/2016	Ugc/2016/001374/In/R	FIGHTER 14.5SC	Indoxacarb 145g/l	HERENBA INDUSTRIES, LTD, INDIA
06/04/2016	Ugc/2016/001373/In/R	DELETE 36EC	Triazophos 350g/l + Deltamethrin 10g/l	HERENBA INDUSTRIES, LTD, INDIA
06/04/2016	Ugc/2016/001372/He/R	WEEDGO 480SL	Glyphosate 480g/l	GREENRIVER INDUSTRY, CO. LTD, CHINA
24/03/2016	Ugc/2016/001371/He/R	MAX 2,4-D 720SL	720g/l 2,4-D Amine salt	WEMAX AGRO LTD, CHINA
24/03/2016	Ugc/2016/001370/He/R	MUDDOSATE 41SL	410g/l Glyphosate IPA salt	WEMAX AGRO LTD, CHINA
24/03/2016	Ugc/2016/001369/He/R	KUUTO-2,4-D 720SL	720g/l 2,4-D Amine salt	AGRICORE CHEMICAL INDUSTRY CO. LTD, CHINA
24/03/2016	Ugc/2016/001368/He/R	KUU-GLYPHOSATE 41SL	410g/l Glyphosate IPA salt	AGRICORE CHEMICAL INDUSTRY CO. LTD, CHINA

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23/03/2016	Ugc/2016/001367/Fe/R	NUTRIPLANT ORGANIC PLUS		JIANGYINLLA NYE, BIOTECHNOLOGY CO. LTD, CHINA
22/03/2016	Ugc/2016/001366/He/R	MAGUGUMA 660SC	Metolachlor 290g/l + Atrazine 370g/l	HANGZHOU AGROCHEMICAL INDUSTRIES LTD
16/03/2016	Ugc/2016/001359/Fu/R	MISTRESS 72WP	Cymoxanil 8% + Mancozeb 64%	MS OSHO CHEMICAL INDUSTRY LTD
16/03/2016	Ugc/2016/001358/He/R	WOUND-OUT 48SL	Glyphosate IPA salt 480g/l	MS OSHO CHEMICAL INDUSTRY LTD
16/03/2016	Ugc/2016/001357/In/R	OGAR 40EC	Dimethoate 400g/l	MS OSHO CHEMICAL INDUSTRY LTD
02/03/2016	Ugc/2016/001356/Fe/R	BARVAR-2	Pantoea agglomerans strain P5 10 ⁷ -10 ⁸ cfu/g	IRAN AGRO-INDUSTRIES
02/03/2016	Ugc/2016/001355/Fe/R	AZOTO BARVAR-1	Azotobacter Vinelandii strain-04 10 ⁷ -10 ⁸ cfu/g	IRAN AGRO-INDUSTRIES
01/02/2016	Ugc/2016/001354/In/R	TOPSHOT 60 OD	Cyhalofop butyl 50g/l + Penoxsulam 10g/l	DOW CHEMICALS EAST AFRICA LTD
25/01/2016	Ugc/2016/001328/In/R	SUPA ACETEMECTIN 5EC	Abemectin 1.8% + Acetamiprid 3.2%	IPROCHEM Co. LTD, SHENZHEN, CHINA
25/01/2016	Ugc/2016/001327/He/R	SUPA METRYN 50SC	Ametryn 500g/l	FINECHEM INDUSTRIAL Co. LTD
18/12/2015	Ugc/2015/001321/In/R	MAXIMUM 200SC	Imidacloprid 200g/l	FORWARD SHANGAI LTD
18/12/2015	Ugc/2015/001320/Fu/R	SUPAZIM 500SC	Carbendazim 500g/l	FORWARD SHANGAI LTD
29/10/2015	Ugc/2015/001306/He/R	STRIM 960EC	S-Metolachlor 960g/l	UNITED PHOSPHORUS LTD, INDIA
29/10/2015	Ugc/2015/001305/He/R	UNIMARK 70WG	Metribuzin 700g/kg	UNITED PHOSPHORUS LTD, INDIA
29/10/2015	Ugc/2015/001304/He/R	FIST 33EC	Pendimethalin 330g/l	UNITED PHOSPHORUS LTD, INDIA
29/10/2015	Ugc/2015/001303/He/R	LIFELINE 280SL	Glufosinate ammonium 280g/l	UNITED PHOSPHORUS LTD, INDIA
29/10/2015	Ugc/2015/001302/He/R	FASCINATE 150SL	Glufosinate ammonium 150g/l	UNITED PHOSPHORUS LTD, INDIA
29/10/2015	Ugc/2015/001301/He/R	AMANORA 720SL	2,4-D Amine salt 720g/l	UNITED PHOSPHORUS LTD, INDIA
28/10/2015	Ugc/2015/001297/He/R	KUU-AMETRYN 50 SC	Ametryn 500g/l	SHANGAI AGRO CHINA INDUSTRIAL TRADE Co. LTD
26/10/2015	Ugc/2015/001296/He/R	STELLAR STAR 21SL	Topramezone 50g + Dicamba	BASF SE

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Attachment Active List of Registered Pesticides in Uganda

			160g/l	
26/10/2015	Ugc/2015/001295/Fu/R	SAAF 75WP	Carbendazim 120g + Mancozeb 630g/kg	UNITED PHOSPHORUS LTD, INDIA
14/10/2015	Ugc/2015/001293/He/R	SUGCANE 80SC	Diuron 800g/l	SINOCHEM NINGBO LTD, CHINA
14/10/2015	Ugc/2015/001292/He/R	MEGAZINE 50SC	Atrazine 500g/l	SINOCHEM NINGBO LTD, CHINA
14/10/2015	Ugc/2015/001291/In/R	SIMALA 50EC	Malathion 500g/l	SINOCHEM NINGBO LTD, CHINA
14/10/2015	Ugc/2015/001290/In/R	SIMETOX 40EC	Dimethoate 400g/l	SINOCHEM NINGBO LTD, CHINA
14/10/2015	Ugc/2015/001289/In/R	SAFURAN 3G	Carbofuran 30g/kg	SINOCHEM NINGBO LTD, CHINA
13/10/2015	Ugc/2015/001288/Fu/R	ASCOSULPH 80WDG	Sulphur 800g/kg	MEGHONANI INDUSTRIES LTD
13/10/2015	Ugc/2015/001287/Fu/R	ASCOPPER 50WP	Copper Oxychloride 500g/kg	NAGARJUNA AGRICHEM LTD, INDIA
13/10/2015	Ugc/2015/001286/In/R	PROFECRON 44EC	Profenofos 400g + Cypermethrin 40g/l	NAGARJUNA AGRICHEM LTD, INDIA
12/10/2015	Ugc/2015/001285/He/R	ROUND-ALL 48SL	Glyphosate 480g/l	SHENZHEN KING QUENSON INDUSTRY Co. LTD
07/10/2015	Ugc/2015/001284/Fu/R	ROUNDAM 48SL	Glyphosate 480g/l	NANJING BESTGREEN CHEMICAL CO. LTD
07/10/2015	Ugc/2015/001283/Fu/R	FAMCOZEB 80WP	Mancozeb 800g/l	NANJING BESTGREEN CHEMICAL CO. LTD
07/10/2015	Ugc/2015/001282/In/R	CYPERFAM 5EC	Cypermethrin 50g/l	NANJING BESTGREEN CHEMICAL CO. LTD
29/07/2015	Ugc/2015/001276/He/R	HAOMETRYN 50SC	Ametryn 500g/l	AGROHAO COMPANY LTD, CHINA
22/07/2015	Ugc/2015/001275/He/R	PRIME GOLD 660SC	Metolachlor 290g + Atrazine 370g/l	SINERIA INDUSTRIES LIMITED
13/07/2015	Ugc/2015/001273/He/R	MUKASATE 48SL	Glyphosate 480g/l	SHANGAI AGROCHEMICALS CO. LTD, CHINA
18/06/2015	Ugc/2015/001267/Fu/R	ALGA MANCOZEB 80WP	Mancozeb 800g/kg	M/S AMBEY LABORATORIES FUT LTD
18/06/2015	Ugc/2015/001266/In/R	ALGACYP 5EC	Cypermethrin 50g/l	M/S AMBEY LABORATORIES FUT LTD
18/06/2015	Ugc/2015/001265/In/R	ALGA DDVP	Dichlorvos 100EC	M/S AMBEY LABORATORIES FUT LTD
18/06/2015	Ugc/2015/001264/He/R	MEGA 2,4-D	2,4-D Amine 720g/L	MEGHMANI ORGANICS LTD
17/06/2015	Ugc/2015/001258/He/R	STOMP CS	Pendimethalin	BASF SE

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17/06/2015	Ugc/2015/001257/He/R	INTEGRITY	Saflufenacil 68g/l + Dimethenamid-P, 600g/l	BASF SE
16/06/2015	Ugc/2015/001256/He/R	SUPANIL 700SL	Butachlor 350g/l + Propanil 350g/l	IPROCHEM COMPANY LTD, CHINA
15/06/2015	Ugc/2015/001251/In/R	DIMIPRID 200SL	Imidacloprid 200g/l	DVA AGRO GmbH, HAMBURG GERMANY

NB:

1. In = Insecticide
2. Ne = Nematicide
3. He = Herbicide
4. Fu = Fungicide
5. Fe = Fertilizer
6. Ro = Rodenticide
7. Gr = Growth Regulator
8. Fg = Fumigant
9. BCA = Biological control agent
10. The following are, until further notice, the Approved Agricultural Chemicals for use in Uganda. More authorized chemicals will, in due course, be approved after they have met the required standards. More details about the approved Dealers and chemicals can be obtained from MAAIF, Department of Crop Protection

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**THE PROJECT ON IRRIGATION SCHEME
DEVELOPMENT IN CENTRAL AND
EASTERN UGANDA (PISD)
RESETTLEMENT ACTION PLAN
FOR ATARI IRRIGATION SCHEME
REPORT**



ASSOCIATED ENGINEERING SURVEYORS LIMITED
Surveying, Mapping and Engineering Consultants.
P.O. BOX 80, KAMPALA, UGANDA
PLOT 1 De Winston Road Floor 1 Suite 2
Tel: 0414-235484, mob. 0712 - 235484
Fax: 0414-235484
E-mail: info@aesuganda.com am@aesuganda.com

JICA STUDY TEAM International Department SANYU Consultant Inc.
JICA STUDY TEAM International Department SANYU Consultant Inc.

JUNE 2018

資料-11.

LIST OF EXPERTS

The following experts were involved during preparation of this Resettlement Action Plan (RAP) for Atari Irrigation Scheme as part of study team

RAP (案)

S/N	NAME	EXPERTISE
1.	Ms. Elizabeth Aisu	RAP specialist –Team Leader
2.	Mr. John Charles Orena-Billa	Social Development Specialist Consultant Engineering Surveyor and MD AES
3.	Mr. Richard Atobi	Land Surveyor
4.	Mr. Francis Xavier Mukudane	Valuation Surveyor
5.	Ms. Rose Aarakit	Sociologist
6.	Mr. Peter Lochom	Assistant Sociologist

(認証中：2018年10月現在)

EXECUTIVE SUMMARY

The Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF) and Ministry of Water and Environment (MWE) with assistance from Japan International Cooperation Agency (JICA) agreed to execute “The Project on Irrigation Scheme Development in Central and Eastern Uganda (PISD)” through technical cooperation in the form of a study to establish medium and large scale irrigation scheme in Uganda targeting farmers cultivating mainly rice in lowland area with unreliable agricultural water sources. The initial survey identified Atari River basin area for further feasibility study. The feasibility study of the project site has been conducted by JICA Study Team and the final project footprint has been identified. Therefore, there is a need to acquire land for the purpose of installing irrigation facilities in the project area. Hence, the preparation of the Resettlement Action Plan (RAP) which will culminate in the compensation of the project affected persons as per the Ugandan laws with guidance from JICA Guidelines for ESC and other international best practices.

Location and Administration

Atari River Basin is found at the boundary between Bulambuli district and Kween district, bordered by Atari River. It lies approximately between latitude 1°43' North and 1°30' South and Longitude 34°27' East and 34°25' West. The project area lies in the two neighboring parishes namely: Buwebele Parish in Bunambutye Sub County of Bulambuli District and Sikwa Parish in Ngenge Sub County of Kween District. The proposed target scheme covers about 7 villages in the two parishes, namely: Sikwa, Sosot, Amukokel, villages in Sikwa Parish and Bunambale, Buwechalo, Bukhayaki and Buwebele village in Buwebele Parish. The total size of this project beneficiary area is about 680ha which is distributed almost equally between the two Parishes in the two Districts.

Project components which require resettlement

The project components that will require resettlement include the construction of the main Irrigation Structures such as:

- Irrigation and Drainage Structures: The Headwork, Main Canal, Secondary Canal, Tertiary Canal, Drainage Canal, and the Appurtenant.
- Flood Control Dyke on both sides
- Scheme Access Roads within the irrigation scheme area
- Construction of workers’ camps and storage for project materials.

These activities will lead to loss of land and property, loss of crops and trees, limited access to water for production, limited access to farmland during construction, loss of income/means of livelihood, and emergence of potentially vulnerable people.

Project Impacts

Population census was carried out of the Project Affected Households (PAHs) in the project area. All together there are 490 PAHs, 251 of them are from Kween District, 174 from Bulambuli District and 65 are in the buffer zone. The 490 PAPs are the household heads who own the affected plots; they were asked how many people they had in their households. Results from the census

survey show that the total number of Project Affected Persons (PAPs) is approximately 2,007. Table below shows the summary of the land acquisition impact of the project per district per village.

District	Sub-county	Parish	Village	Number of PAHs	Number of Structures	Land (ha)
Kween	Ngenge	Sikwa	Amukokel	61	3	10,068
			Sikwo	151	0	12,948
			Sosot	39	0	2,459
		Total (a)		251	3	25,475
Bulambuli	Bunambutye	Buwebele	Bunambale	145	7	20,663
			Buwechalo	27	0	1,108
			Bukhayaki	2	0	0,544
		Total (b)		174	7	23,939
Buffer Zone	Bunambutye			32	0	4,990
				33	0	7,071
				65	0	12,061
		Grand Total (a) + (b) + (c)		490	10	59,851

Crops and Trees affected in the Project Area

The crops and trees that will be in the project area include; Avacado, Mature Mango Trees, Banana Clumps, Paw Paws, Orange trees , Jack Fruit Trees, Coffee Trees, Eucalyptus Trees Greveria, Fig Trees, Acaacia Trees and Bust Trees. All together a total of 2,579 crops and trees will be lost due the implementation of the irrigation project in Atari area. Kween District will lose the highest number of crops and trees 2040 while Bulambuli District will lose 555.

Eligibility Criteria

A Project Affected Persons (PAP) is one who, as consequence of the project, sustains losses as a result of impact on 1) land, 2) structure, 3) immovable asset and/ or d) livelihood/ incomes. Through the detailed census and assets/ land surveys, those PAPs were identified.

In the Atari Irrigation Scheme land that will be lost is the land on which the irrigation infrastructure such as: (Dyke, Main Canal, Primary Canals, Secondary Canals and access roads) will be constructed. This involves strips of land from the already mapped land in the scheme; therefore PAPs are not losing entire land.

Cut-off date

The cut-off-date of eligibility refers to the date prior to which the occupation or use of the project area makes residents/users of the same eligible to be categorized as PAPs and be eligible to Project entitlements. In the Project, Cut-off date was the beginning date of the final confirmation of acquired land and assets survey. This date was disclosed to each affected persons by the consultants who were carrying out property and land surveys plus and also was the commencement of the socio-economic and census survey. The establishment of the eligibility cut-off date was intended to prevent the influx of ineligible non-residents who might take advantage of Project entitlements.

PAPs were informed that the date when the property census and socio-economic survey commenced was the official cut-off date and this was 20th January 2018, which is the cut-off date for this RAP.

Livelihood Restoration Measures

The nature of displacement is such that at times cash compensation and other short-term mitigation measures may not be effective to ensure that affected persons get back to their original status or better in terms of their earnings and productivity. Therefore, the designing an income and livelihood restoration plan is essential.

Livelihood Needs Assessment

The assessment of needs on a household basis will be done based on baseline data gathered from the following sources: Consultation with government, households and key persons; Asset Survey (Structure, Farm, and Crops); Socio-economic survey and Field visits with extensive consultations

Follow up surveys and in-depth interviews during field visits will lead questions to be asked regarding alternative land sizes and locations, and related questions regarding skills and other assets. Also, information will be gathered on preferences for programs, training opportunities, and community development initiatives. The data collected will be assessment for each household's requirement regarding livelihood and income restoration programs.

Grievance Redress Mechanism

A simple Grievance Redress Mechanism (GRM) has been proposed to enable timely settlement of grievances to the PAPs. The grievance procedures will be secured and administered at the local level to facilitate access, flexibility and openness to all PAPs. The grievance redress procedure ensures consultations and involvement of the respective District and Village officials and other key stakeholders and provides for record keeping determining the validity of claims, and to ensure that solutions are taken in the most transparent and cost effective ways for all PAPs. The grievance resolution committee members shall undergo a briefing session about their roles and requirements at early stage before commencement of RAP implementation activities. The grievance resolution mechanism will involve four stages as described below.

Stage I: Village Grievance Resolution Committee (VGRC)

The Committee will explore all possibilities to solve the raised grievance at the village level and refer to higher level if the grievance is not solved by the committee. This committee will deal with boundary disputes, identification of rightful owners and disputes among family members. However, if aggrieved PAP fails to agree with the committee, the PAP can utilize stage II to solve the grievance.

Stage II: District Grievance Resolution Committee (DGRC)

The committee will work together with the VGRC to resolve grievances raised by the PAPs including revisiting the site investigation. The Committee will explore all possibility to solve the

raised grievance failed to be solved by the VGRC. However, if the DGRC and PAP fail to agree, the PAP can utilize stage III as a last resort to solve the grievance.

Stage III: Land Tribunals

All disputes related to land will be resolved with the help of the existing land tribunals. If the DGRC fails to solve the grievance, it will be referred to the land tribunals. At each level, the land tribunal will endeavour to solve the dispute. If it fails then the dispute will be referred to the land tribunal at the next level. The land tribunals are categorised as follows; The Village Land Council; The Parish Land Tribunal; and The District Land Tribunal.

Stage IV: Courts of Law

Ugandan legislation allows a right of access to the courts of law by any person who has an interest or right over property. If the grievance procedure fails to provide a settlement, complainants can still seek legal redress in courts of law as a last resort.

Implementation Framework

Ministry of Agriculture, Animal Industry and Fisheries

MAAIF will be responsible for resources mobilization, distribution and implementation of compensation and resettlement. Specifically, the Project Implementation Unit (PIU) in MAAIF will be involved with implementation of this RAP. MAAIF has the responsibility to directly oversee resettlement/compensation activities, identifying and co-ordinating all players in the resettlement programme, managing grievances and monitoring RAP implementation. The Ministry is also responsible for provision of technical assistance in the design and construction of on-farm irrigation systems. MAAIF will further be responsible for the provision of extension services and advice to farmers on irrigation systems and promotion of efficient water use. In addition, the Ministry will provide support in the supervision and monitoring of water use and management. Other agencies responsible for the smooth implementation of the RAP include:

Ministry of Lands, Housing and Urban Development MLHUD- will therefore play a direct role in compensation and resettlement activities of proposed project.

Ministry of Gender, Labour & Social Development, MGLSD- working through Community Development Officers (CDOs) at district and sub-county level will be responsible for spearheading and coordinating gender responsive and community development, in particular, sensitizing community members to form groups that will adequately utilize the water amicably.

Local Governments in Which the Project Area Is Situated-are mandated to set compensation rates for crops and non-permanent structures through their District Land Boards. Local governments will also be important in managing and monitoring social impact through site visits or resolving complaints from affected communities. During compensation, LC1s and LC3s in project-affected areas will be helpful for identification or verification of rightful property owners.

Uganda Land Commission-holds and manages land in Uganda vested in or acquired by Government of Uganda and would be involved where such land is affected by the proposed

Irrigation project. Uganda Land Commission will manage the land covered by the Irrigation infrastructures on behalf of the Government of Uganda.

Private Sector Entities—such as consultants hired by MAAIF for verification and actual payment of compensation to PAPs. These entities are not known at this time since they will be hired through competitive bidding as per Uganda’s procurement laws.

Costs and Budget

Valuation Survey Report indicates that the Total Compensation Award for PAPs to be affected by the proposed the irrigation Project is: Ug. **(496,758,543)** Shillings: Four Hundred Ninety Six Million, Seven Hundred Fifty Eight Thousand for compensation only.

However, the compensation process involves so many other factors that need to be taken as indicated the table below. This therefore will bring the total compensation cost to: **Uganda Shillings: One Thousand Three Hundred Eighty Four Million, Seventy Two Thousand, Two Hundred Sixty seven Only (1,384,072,209)**

Category	Amount	Activities involved
1. Total Valuation of Land	335,174,000	The ones in yellow will change after valuer gives final figures
2. Valuation for crops/plants	89,375,000	
3. Valuation for buildings/Structures	5,974,450	
4. Disturbance allowance 15%	66,235,093	
Sub-Total	496,758,543	By valuer as final as per today
5. RAP Implementation and Administration 40%	198,703,417	Sensitization of PAPs Verification of PAPs Disclosure of amounts Training of PAPs on proper use of compensation funds Assist PAPs open accounts Prepare accountability report
6. RAP Update 20%	99,351,708	Done before RAP implementation Ensure all PAPs are captured Include PAPs who were left out/absent during the RAP preparation Display of final RAP report Prepare supplementary report for approval by CGV
6. Grievance Committee 20%	99,351,708	Election of grievance redress committees Train the committee members Sitting allowance and transport of committee members Prepare grievance redress log report
7. Stakeholder Participation 20%	99,351,708	Continuous process to keep PAPs aboard about the project activities Disclosure of information about the project
8. Livelihood and income restoration during	99,351,708	Carry out a needs assessment on all PAPs to establish the opportunity cost of being off their

Category	Amount	Activities involved
construction preparation 20%		land during construction To establish the best and agreeable form of compensation To establish training opportunities and community development initiatives
9. Estimated amount for livelihood & income restoration for PAPs	92,500,000	Training in agriculture, and other needs will be established after the needs assessment e.g prove improved seeds, agriculture farm equipment
Sub-Total RAP Implementation	688,610,249	
10. Monitoring and Evaluation Internal 15%	74,513,781	To monitor the effectiveness of the compensation process To ensure clearance of the site before commencement of construction Follow-up on land re-arrangement
11. Monitoring and Evaluation External 25%	124,189,636	To make a follow-up on the resettlement activities evaluate whether the goals and objectives of resettlement were achieved
Sub total	198,703,417	
Grand Total	1,384,072,209	

Monitoring and Evaluation Activities

The JICA Guidelines/World Bank OP4.12 policy on resettlement planning provides that the implementer (MAAIF) of the project shall be responsible for Monitoring and Evaluation (M&E) activities provided for by this RAP. Monitoring will provide an advance warning system for MAAIF and an avenue through which the PAPs will make their needs and reactions known. The funding for the M&E activities shall form part of the project cost.

To ensure that the implementation of the land acquisition and resettlement is carried out in accordance with the relevant requirements of the RAP and to guarantee the progress and quality of the resettlement actions, both internal and independent external monitoring and evaluation procedures will be adopted.

The purpose of resettlement monitoring and evaluation will be to verify that:

- Procedures and obligations described in the RAP are implemented;
- Eligible PAPs receive their full compensation prior to the start of construction activities;
- Mitigation measures have helped people in restoring their lives in a sustainable manner;
- Complaints and grievances of the PAPs are adequately addressed and corrective measures implemented;
- If need be, changes in the RAP procedures and obligations are made to improve service delivery to the PAPs.

Accordingly, the primary monitoring and evaluation activities will be the responsibility of the MAAIF as the project sponsor. MAAIF through the Project Implementation Unit (PIU) will undertake the internal monitoring of the implementation of the land acquisition and resettlement so as to ensure that all the responsible units follow the schedule and comply with the guiding principles of the RAP.

LIST OF ACRONYMS

ESIA:	Environmental and Social Impact Assessment
ESMP:	Environmental and Social Management Plan
GoU:	Government of Uganda
HH:	Household
JICA:	Japan International Cooperation Agency
LRIP:	Livelihood Restoration and Income Programme
MAAIF:	Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF)
MoWE:	Ministry of Water and Environment
NEMA:	National Environment Management Authority
NGO:	Non- Governmental Organization
OP:	Operational Policy
PACC:	Project Area Coordination Committee
PAPs:	Project Affected Persons
PISD:	Project on Irrigation Scheme Development
PIU:	Project Implementation Unit
RAP:	Resettlement Action Plan
WB:	World Bank
VIP:	Ventilated Pit Latrine

DEFINITIONS

Unless the context dictates otherwise, the following terms will have the following meanings:

“**Census**” means a field survey carried out to identify and determine the number of Project Affected Persons (PAP) or Displaced Persons (DPs). The meaning of the word shall also embrace the criteria for eligibility for compensation, resettlement and other measures emanating from consultations with affected communities.

“**Project Affected Persons (PAPs)**” are persons affected by land use or acquisition needs of the project. These persons are affected because they may lose, be denied, or be restricted access to economic assets; lose shelter, income sources, or means of livelihood. These persons are affected whether or not they must move to another location.

“**Compensation**” means the payment in kind, cash or other assistances given in exchange for the acquisition of land including fixed assets thereon as well as other impacts resulting from sub-project activities.

“**Cut-off date**” is the date of commencement of the census of PAPs or DPs within the project area boundaries. This is the date on and beyond which any person whose land is occupied for sub-project use, will not be eligible for compensation.

“**Displaced Persons**” mean persons who, for reasons due to involuntary acquisition or voluntary contribution of their land and other assets under the project will suffer direct economic and/or social adverse impacts, regardless of whether or not the said Displaced Persons are physically relocated. These people will have their: standard of living adversely affected, whether or not the Displaced Person must move to another location, lose right, title, interest in any house, land (including premises, agricultural and grazing land) or any other fixed or movable assets acquired or possessed, lose access to productive assets or any means of livelihood.

“**Economically Displaced Persons**” means Project affected persons who lose income streams or means of livelihood resulting from land acquisition or obstructed access to resources (land, water or forest) caused by the construction or operation of the Project or its associated facilities.

“**Physically Displaced Persons**” means Project affected persons who lose shelter and assets resulting from the acquisition of land associated with the Project that requires the affected person(s) to move to another location.

“**Involuntary Displacement**” means the involuntary acquisition of land resulting in direct or indirect economic and social impacts caused by: loss of benefits from use of such land; relocation or loss of shelter; loss of assets or access to assets; or loss of income sources or means of livelihood, whether or not the Displaced Persons have moved to another location; or not.

“**Involuntary Land Acquisition**” is the repossession of land by government or other government agencies with or without compensation, for the purposes of a public project against the will of the landowner. The landowner may be left with the right to negotiate the amount of compensation proposed. This includes land or assets for which the owner enjoys uncontested customary rights.

“**Land**” refers to agricultural and/or non-agricultural land and any structures thereon whether temporary or permanent and which may be required for the project.

“**Land acquisition**” means the repossession of or alienation of land, buildings or other assets thereon for purposes of the Project.

“**Rehabilitation Assistance**” means the provision of development assistance in addition to Compensation such as land preparation, credit facilities, training or job opportunities needed to enable Project Affected Persons and Displaced Persons to improve their living standards, income earning capacity and production levels; or at least maintain them at pre-project levels.

“**Resettlement and Compensation Plan**”, also known as a “**Resettlement Action Plan (RAP)**” or “**Resettlement Plan**” - is a resettlement instrument (document) to be prepared when program locations are identified. In such cases, land acquisition leads to physical displacement of persons, and/or loss of shelter, and /or loss of livelihoods and/or loss, denial or restriction of access to economic resources. RAPs are prepared by the party impacting on the people and their livelihoods. RAPs contain specific and legal binding requirements to resettle and compensate the affected party before implementation of the MAAIF program activities.

“**Replacement cost**” means replacement of assets with an amount sufficient to cover full cost of lost assets and related transaction costs. The cost is to be based on **Market rate (commercial rate)** according to Uganda law for sale of land or property and without deduction for depreciation and salvage materials per the WB OP 4.12. In terms of land, this may be categorized as follows: (a) “**Replacement cost for agricultural land**” means the pre-MAAIF project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the costs of: (b) preparing the land to levels similar to those of the affected land; and (c) any registration and transfer taxes;

“**Replacement cost for houses and other structures**” means the prevailing cost of replacing affected structures, in an area and of the quality similar to or better than that of the affected structures. Such costs will include: (a) transporting building materials to the construction site; (b) any labour and contractors’ fees; and (c) any registration costs.

“**Resettlement Assistance**” means the measures to ensure that MAAIF Project Affected Persons and Displaced Persons who may require to be physically relocated are provided with assistance during relocation, such as moving allowances, residential housing or rentals whichever is feasible and as required, for ease of resettlement.

“**Customary Tenure**” Is governed by rules generally accepted as binding and authoritative by the class of persons to which it applies. That is customary tenure is not governed by written law. Landowners do not have deeds recognizing their ownership rights and land is managed according to rules and practices generally accepted as legitimate and binding by a particular community. Customary laws vary according to regions but most systems are based on the same general principles. Ownership rights are recognized by the community through inheritance, purchase, or by settling on a plot of land which was previously vacant. Under Ugandan customary legal systems, particularly in northern and eastern Uganda, land is usually communally owned by the clan but it

can also be owned individually. Rights and responsibilities that derive from communal ownership are shared among various members of the clan according to traditional practices. Usually, the head of the clan or family, the “custodian”, has the responsibility to look after each member’s land rights and to allocate land fairly to all. Under this system, disputes are heard and settled by clan elders.

“**Leasehold Tenure**” Is created either by contract or by operation of the law and is a form under which the landlord of lessor grants the tenant or lessee exclusive possession of the land, usually for a period defined and in return for a rent. The tenant has security of tenure and a proprietary interest in the land.

“**Freehold Tenure**” Derives its legality from the constitution and its incidents from the written law. Involves the holding of land in perpetuity or a term fixed by a condition and also enables the holder to exercise, subject to the law, full powers of ownership.

“**Mailo Tenure**” Has roots in the allotment of land pursuant to the 1900 Uganda Agreement and derives its legality from the constitution and its incidents from written law. It involves the holding of land in perpetuity and permits the separation of ownership of land from the ownership of developments on land made by a lawful or bona fide occupant. The system enables the holder to exercise all powers of ownership, subject to the rights of those persons occupying the land at the time of the creation of the mailo title and their successors.

“**Squatters**” refers to individuals or groups who occupy lands without the express consent of the landowner and who have sufficient income for legitimate housing. The term shall also apply to persons who have previously been awarded homelots or housing units by the Government but who sold, leased or transferred the same to settle illegally in the same place or in another urban area, and non-bona fide occupants and intruders on lands reserved for socialized housing.”

ACKNOWLEDGEMENT

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1. NECESSITY OF THE LAND ACQUISITION AND RESETTLEMENT

1.1. Background

The Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF) and Ministry of Water and Environment (MWE) with assistance from Japan International Cooperation Agency (JICA) agreed to execute “The Project on Irrigation Scheme Development in Central and Eastern Uganda (PISD)” through technical cooperation in the form of a study to establish medium and large scale irrigation scheme in Uganda targeting farmers cultivating mainly rice in lowland area with unreliable agricultural water sources. The Study has been entrusted by JICA to the JICA Study Team (JST). During the first phase of the project, between May 2014 and March 2015, JICA Study Team together with MAAIF and MWE made the initial Feasibility Study (FS) of the proposed potential project area for irrigation development.

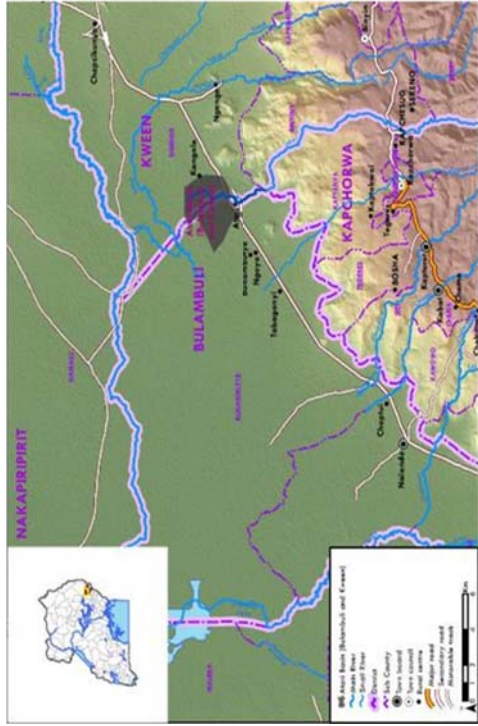
The initial survey identified Atari River basin area for further feasibility study. The feasibility study of the project site has been conducted by JST. As it is the case in most part of Uganda, the land in the project area is held under customary ownership with no clear boundary among the owners. However, there is a need to acquire land for the purpose of installing irrigation facilities in the project area. Hence, the preparation of the Resettlement Action Plan (RAP) using an acceptable land acquisition method which is paramount for smooth implementation of the project. This RAP will culminate in the compensation of the project affected persons as per the Ugandan laws with guidance from JICA Guidelines for ESC and other international best practices. Therefore, JST together with the MAAIF has contracted Associated Engineering Surveyors to prepare a Resettlement Action Plan for Atari Irrigation Scheme under PISD.

1.2. Location and Administration

Atari River Basin is found at the boundary between Bulambuli district and Kween district, bordered by Atari River. It lies approximately between latitude 1°43' North and 1°30' South and Longitude 34°27' East and 34°25' West as shown in Figure 1. Administratively, the project area lies in the two neighboring parishes namely: Buwebere Parish in Bunambuteye Sub County of Bulambuli District and Sikwa Parish in Ngenge Sub County of Kween District. The proposed target scheme covers about 6 villages in the two parishes, namely: Sikwa, Sosot, Amukokel, villages in Sikwa Parish and Bunambale, Buwechalo, Bukhayaki village in Buwebere Parish. Specifically, the project area is situated at the foot of the mountain and in area to the north of the National Road that links Mbale to Moroto.

The total size of this project beneficiary area is about 680ha which is distributed almost equally between the two Parishes in the two Districts. The area is characterized as flat land, which often is affected by flood from the river, mainly, during rainy season. Although, most of the area is used for upland crops such as maize production and animal grazing, there is also an increase in the use of the area for rice production which results in fragmentation of the land ownership/tenant (chiefly on Sikwa side). Therefore, the survey should give special emphasis to these fragmented land that might be used by the owner or being used by tenants.

Table below shows the administrative division that covers the project. The geological and administrative location of the project area is shown in エラー! 参照元が見つかりません。 below.



Source: JICA Study Team

Figure 1: Location Map of the Project Area

Table 1 Administrative division of the project area

District	Sub-County	Parish	Village in the target area	Remark
Kween	Ngenge	Sikwa	Sikwa, Sosot, Amukokel,	Most of the community resides along the road and on hill side of the parish
Bulambuli	Bunambuteye	Buwebere	Bunambale, Buwechalo, Bukhayaki	Most of the community resides along the road and on hill side of the parish

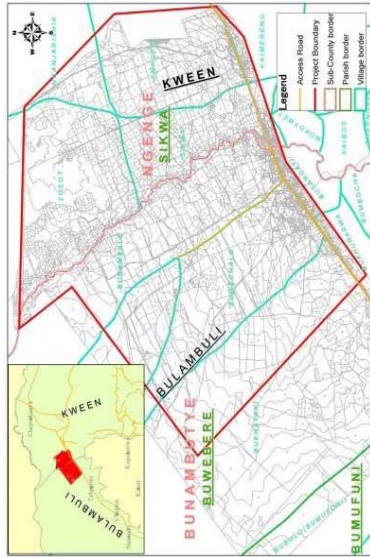


FIGURE 2: THE PROJECT AREA BY DISTRICT, SUB-COUNTY AND PARISH

Source: JICA Study Team

1.3. Project components which require resettlement

The project components that will require resettlement include the construction of the main Irrigation Structures such as:

- i. Irrigation and Drainage Structures: The Headwork, Main Canal, Secondary Canal, Tertiary Canal, Drainage Canal, and the Appurtenant.
 - ii. Flood Control Dyke on both sides
 - iii. Scheme Access Roads within the irrigation scheme area
 - iv. Construction of workers’ camps and storage for project materials.
- These activities will lead to loss of land and property, loss of crops and trees, limited access to water for production, limited access to farmland during construction, loss of income/means of livelihood, and emergence of potentially vulnerable people. Table 2 below shows the components that will lead to land acquisition.

TABLE 2: SHOWING COMPONENTS OF THE PROJECT LEADING TO LAND ACQUISITION

Components	Item	Amount	Remarks
Irrigation and Drainage	Headwork	1 Place	Movable weir type, Intake, De-silting basin
	Main canal	2.3 km	Concrete blocking lining
	Secondary canal	15.0 km	Concrete blocking lining
	Tertiary canal	23.5 km	Earth canal
	Drainage canal	18.3 km	Earth canal
River Dyke	Dyke	5.1 km	Both sides, 1.4m height
	Maintenance and Operation road	7.7 km	4m width, laterite pavement with 100mm thickness.
Land Re-organization	Land leveraging etc.	12.0 ha	Both sides, 6ha in each.

Source: JICA Study Team

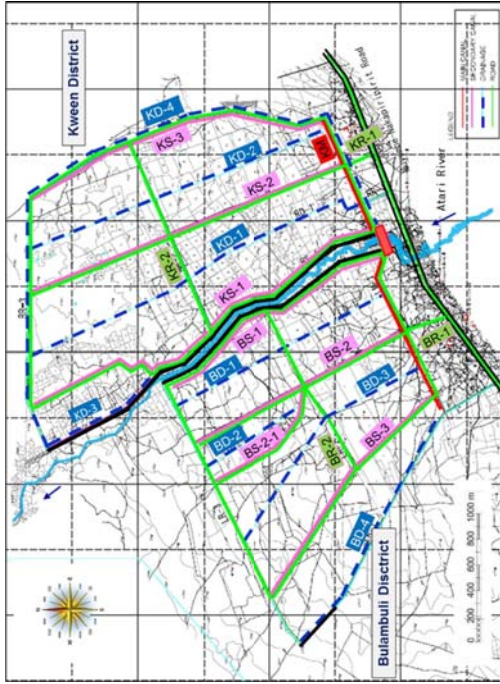


FIGURE 3: MAP SHOWING LOCATION OF IRRIGATION STRUCTURES IN THE PROJECT AREA

1.4. Project Affected Area

It should be noted that not all the Atari Irrigation scheme project area will be affected in terms of land acquisition. Previous studies conducted such as the feasibility study which determined the entire project area and the land ownership mapping exercise established the rightful sizes and owners of each plot within the project area. The project design map containing the irrigation infrastructure was then superimposed on the mapped plots to identify those plots that will be affected by the irrigation infrastructure such as; the main canals, drainage canals, dykes and access roads. The three project maps (figures 3) show the project surveyed area and the infrastructure that will impact on the land.

1.5. Measures for minimizing resettlement and land acquisition during Project implementation

This RAP report whose main objectives are to present the adverse impacts on land, people’s activities and assets due to the proposed Project and propose a set of mitigation measures that are commensurate to the extent of impacts. Further, it aims to ensure the following:

- i. Where it is not feasible to avoid resettlement, resettlement activities are conceived and executed as sustainable development programmes, providing sufficient mitigation measures.
- ii. Affected people are assisted in their efforts to improve their livelihoods and standards of living, or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.
- iii. Affected people are meaningfully consulted and have opportunities to participate in planning and implementing resettlement programmes.

The RAP carries forward the findings of the ESIA study. Besides listing the non-tangible impacts, it quantifies the tangible impacts and enlists the affected persons/households along with their impacted properties. The scope of the RAP includes:

- extent of impacts, based upon the census/survey of population affected by the project;
- assessment of the potential socio-economic impacts;
- Consultation with stakeholders including: district officials, women and youth groups, the host communities and the project affected persons (PAPs) in each of the villages in the project area.
- review criteria to determine eligibility and other entitlements or forms of assistance for the selected option;
- valuation based on entitlements applicable and determination of an appropriate compensation package providing the full compensation budget;
- determination of other measures necessary to assist affected people to improve or restore living standards in line with the ESMP;
- review existing grievance mechanisms to help formulate clear procedures for settlement of disputes including taking into account traditional dispute settlement mechanisms and judicial recourse;
- review existing and recommend on potential institutional arrangements for coordination and implementation of the RAP including the costs of implementation;
- design a monitoring and evaluation (M&E) framework to enable assessment of achievement/progress of RAP implementation based on indicators; and
- Present a detailed schedule of implementation activities.

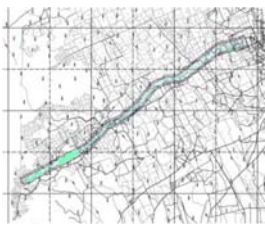

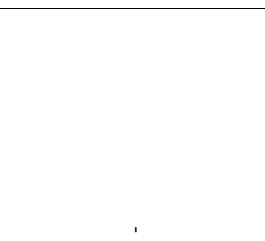
1.6. Alternatives of initial design to avoid/ minimize resettlement and land acquisition
Initial studies including feasibility studies, environmental and social impact assessment, and landownership and boundary mapping were conducted to ensure that involuntary resettlement is minimized as much as possible.

- Feasibility Study: Between May 2014 and March 2015, feasibility studies were initiated to establish the best areas for irrigation projects in Uganda and Atari River basin was identified for further studies.
- In March 2016, landownership and boundary mapping exercise was carried out to identify the sizes and rightful owners of the plots land in the project area. This was part of the land acquisition strategy aimed at avoiding/minimizing land acquisition and involuntary resettlement as much as possible.
- In February 2017, a feasibility study that included an Environment and Social Impact Assessment plus an Abbreviated Resettlement Action Plan were conducted and this study carried out a comparison of several alternatives and came with the best after looking at all aspects including; social impact, land acquisition and its impact, involuntary resettlement within buffer zone, Impact on local community and land use and utilization of the local resources as shown in table 3 below.

Alternative 1 which will involve restoration of the original waterway was adopted and installation of a dyke would minimize impact on resettlement and land acquisition because a small portion of

the land will be required for the construction of the dyke. Resettlement will be minimized because almost all the land in the project area is mainly used for growing crops.

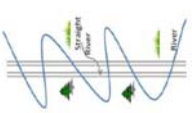

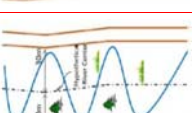

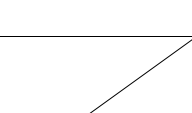
TABLE 3 ALTERNATIVES OF INITIAL DESIGN TO AVOID/ MINIMIZE RESETTLEMENT AND LAND ACQUISITION

Considerations for Choice of Alternatives	ALT-L1	ALT-L2	ALT-L3 (Without Project)
Layout			
Outline of the Plan	This alternative has installation of River Dyke along the original waterway which is also the boundary of Kween and Bulambuli Districts. buffer zone shall be established at 30m from hypothetical center line of original waterway to preserve buffer zone for purification of water and preserve existing natural forest along old river course. Downstream part of original river shall be restored by excavating about 30cm from existing river bed to maintain the waterway and convey the same capacity of discharge with upstream.	This alternative has installation of River Dyke along the existing river course which was a canal constructed to irrigate the right side of Atari River. Protection zone shall be set with 30m from center line of irrigation canal to preserve buffer zone for purification of water.	Nothing to be changed from the current condition. No regulation and wise-use of wetland become impossible. It is expected that planned Community-Based Wetland Management Plan (hereinafter referred to as "CbWMP") will be implemented by the community together with related District and to realize wise-use of wetland.
Irrigation Area	680 ha	680 ha	450 ha
Judgment and reason	Adopted The river course restoration and protection dyke installation will contribute to the local productivity in term of environmental and social aspect. Flood mitigation will be attained. Restoration of water flow in the downstream will hydrate the Ramsar site that	Not adopted The downstream part of left side of the project area will continue to dry up with no river water flow and it leads to dehydrate the Ramsar site that invites farmers' invention to the Ramsar site. Since existing waterway is artificial canal, building the buffer zone does not have	Not adopted No flood control is realized and negative impacts on the area are Maximum.

Considerations for Choice of Alternatives	ALT-L1	ALT-L2	ALT-L3 (Without Project)
	prevents farmers' invention to the Ramsar site.	much positive impact in terms of environmental and social aspect.	

Source: EIA Report in FS (2017).

TABLE 4 COMPARISON OF ALIGNMENT OF PROTECTION DYKE AND PROTECTION AREA

Alternative	ALT-P1	ALT-P2	ALT-P3	ALT-P4	ALT-P5
Layout					
Outline of the Plan	River improvement by straight line with bank protection and no River Dyke against flood. Therefore more land resource can be available for development.	To install River Dyke along the current river curvature to prevent the flood flow. Even in this case, more space is needed for Buffer Zone more than the width of 5 to 20m which is agreed on CbWMP.	To install River Dyke leaving 30m wide area from river center. The alignment and necessary space is almost the same as ALT-P2.	To install River Dyke leaving 30m wide area from river curvature. The National Environment Regulation (2000) suggests taking 30m from river bank.	Nothing to be changed, so no River Dyke and Buffer Zone.
Flood Control	2	5	5	5	1
Environmental Impact	1	3	3	3	2
Biodiversity	1	3	3	3	2
Water quality and purification	1	3	4	4	3
Environmental condition within protection zone	2	4	4	4	2
Affect to the downstream	1	3	3	3	2

Alternative	ALT-P1	ALT-P2	ALT-P3	ALT-P4	ALT-P5
Social Impact	2	3	3	3	2
Land acquisition and its impact	5	2	2	1	3
Involuntary resettlement within buffer zone	3	3	3	3	2
Impact to Local economy	5	4	4	4	1
Benefit, Cost and Environmental impact	1	3	4	2	5
Total Point	24	36	38	35	25
Evaluation	Very Bad	Good	Very Good	Fair	Bad

Source: EIA Report in FS (2017).

1.7. Alternatives Considered in the Outline Design (OD)

In the Project, River Dykes will be constructed with securing the projected zone which established at 30m from hypothetical centerline of Atari River in each side. Additionally, activities within the buffer zone without permission from executive director of NEMA are not accepted excepting some activities, in accordance with “The National Environment (Wetlands, River Banks, and Lake Shores Management) Regulations (2000).” Moreover, farming activities are not accepted. Since farmers those who have cultivated in the buffer zone will not be possible to continue their activities after establishment of the buffer zone, the lands within the buffer zone are to be acquired by the Project. On the other hand, when it designs the buffer zone without implementation of river training, area needed to be acquired will increase extremely in two sections. From the aspect for minimizing area acquired, the alternatives were considered regarding to course of River Dykes as following; see Figure 4 below.

TABLE 5 SHOWING ALTERNATIVES CONSIDERED DURING OD

Item	Alternative-1	Alternative-2
Illustration		
Design	<ul style="list-style-type: none"> Surrounding area of current water diversion points to Kween side is meandering. When the Project will not implement river training, Buffer Zone of right side requires the width of more than 80 m from hypothetical centerline (see, red circle of the above figure). 	<ul style="list-style-type: none"> The width of Protected Zone is designed as 30m in accordance Buffer principle of the Project. Additionally, the slight river training will be implemented (see, red circle of the above figure).
Land Acquisition	<ul style="list-style-type: none"> Since the large width of Buffer Zone is required, area needed to be acquired is increased. 	<ul style="list-style-type: none"> In comparison of Case-1, area of acquired farmland is 25,609m² smaller than that of Case-1.

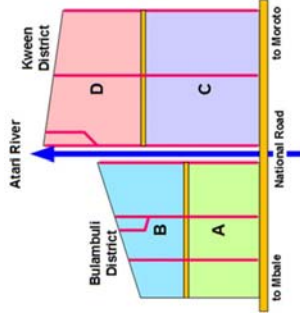


Figure 4. Phasing for Construction Works by Area
 Note:
 A: Upstream of Bulambuli District
 B: Downstream of Bulambuli District
 C: Upstream of Kween District
 D: Downstream of Kween District

1.8. Tentative Construction Schedule

In the Project, development of new farmlands is not planned, while the rearrangement of existing farmlands will be conducted. For minimizing the negative impacts on the current agricultural activities by the construction works, the area where construction worked have been completed will be handed over to the land owners in sequence (see, Figure 4). On the other hand, farming activities at the construction sites can be affected due to the traffic of construction vehicles in terms of safety. The explanation about stage-wise construction area and period when farmers can cultivate in their lands shall be provided in advance. The tentative construction schedule phased by area is shown in Table 5.

Table 5. Tentative Construction Schedule Phased by Area

Phase	2020												2021												2022											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7					
A	Construction Work, Farmers cannot enter.												Construction Work, Farmers cannot enter.												Construction Work, Farmers cannot enter.											
B	Farmers can enter to cultivate.												Construction Work, Farmers cannot enter.												Farmers can enter to cultivate.											
C	Taking a detour is required.												Construction Work, Farmers cannot enter.												Construction Work, Farmers cannot enter.											
D	Farmers can enter to cultivate.												Farmers can enter to cultivate.												Construction Work, Farmers cannot enter.											
	Farmers can enter to cultivate.												Farmers can enter to cultivate.												Taking a detour is required.											

2. LEGAL FRAMEWORK ON LAND ACQUISITION AND RESETTLEMENT

This section summarizes the legislative framework for land acquisition and resettlement activities and provides an overview of the relevant national policies, legal and institutional framework to provide guidance to the planning for the RAP, as set out in policies and legislation of the GoU and taking cognizance of the policies of JICA Guidelines / World Bank OP4. 12 related to involuntary resettlement.

2.1. Ugandan Policies, Laws, and Regulations

Table below indicates relevant Uganda policies, laws and regulations for land acquisition and resettlement which are applicable to the Project.

TABLE 6: RELEVANT UGANDA POLICIES, LAWS AND REGULATIONS FOR LAND ACQUISITION AND RESETTLEMENT

Name of Policy, Laws, and Regulations	Key Contents
The Constitution of Uganda (1995);	The constitution provides procedures of land the acquisition for public interest and of the "prompt payment of fair and adequate compensation" prior to taking possession of the land.
The National Land Policy (2013)	This policy addresses the contemporary land issues and conflicts facing the Country.
The Land Act (1998)	This act addresses land holding, management control, and dispute processing.
The Land Acquisition Act (1965)	This Act makes provision for the procedures and method of compulsory acquisition of land for public purposes
National Environment Management Policy (1994)	Uganda has no resettlement regulations or guidelines except as alluded to in the Land Act. This policy however broadly requires projects to assess potential social impacts caused by the project
National Development Plan 2015/16 – 2019/20 (NDPII)	NDP addresses structural bottlenecks in the economy in order to accelerate socio-economic transformation for prosperity and key among these is improvement of livelihood of farmers cultivating food crops in the lowland (wetland) area of the country through the development of sustainable irrigated agriculture for the rice production taking into account wise-use of wetland area.
National Gender Policy (1997)	This policy indicates gender considerations on equal opportunity in occasion of recruitment of construction labour, and on decision making during resettlement.
HIV/AIDS Policy (1992)	This policy indicates requirements that contractors or their subcontractors, especially in regard to having an in-house HIV Policy, worker sensitization and the provision of free condoms.
Local Government Act, Cap. 243 (2008)	The Act empowers districts administrations to develop and implement district rates upon which compensation for crops and non-permanent structures is based.
Registration of Titles Act, Cap. 230 (2000)	This Act provides the guidance for registration of ownership
Disabilities Act (2006)	This Act is relevant to the Project since it points out the requirement for support of any PAPs identified as PWDs to ensure that their right to adequate standard of living is not compromised.

As shown in Table 3 above shows the legal frameworks that regulate the land and resettlement relations in Uganda. These frameworks define land rights, ownership, procedures, and requirements of transfer and acquisition of land between individuals and communities. They also provide

procedures for the acquisition of land by the state or a public body for public projects. Among the most important legal instruments in this regard are the following:

- The Constitution of Uganda (1995);
- The National Land Policy 2013
- The Land Act (1998);
- The Land Acquisition Act (1965);

While all matters relating to land acquisition, compensation, and resettlement are managed within the provisions of the above legislation, the most decisive document in this regard is the Land Act of 1998, as amended.

Land take refers to acquiring of land for some public purpose by government agency, as authorized by the law from land owner(s) after paying compensation for losses incurred by land owner(s) due to surrendering their land. For land take and displacement of people, specific attention is drawn to two Ugandan laws that will be applicable to land tenure, compensation and resettlement in this project, namely:

- The Constitution of the Republic of Uganda, 1995
- The Land Act, Cap 227

2.1.1. The Constitution of the Republic of Uganda (1995)

The Constitution vests all land of Uganda in the citizens of Uganda. However, the government or local government may acquire land in the public interest. Such acquisition is subject to the provisions of Article 26 (1) of the Constitution, which gives every person in Uganda a right to own property. The Constitution also prescribes the tenure regimes in accordance with which rights and interests in which land may be held namely; Customary, Freehold, Mailo and Leasehold. According to the Constitution, all land belongs to the people of Uganda and is held in trust by the Government. Government is authorized to acquire land for a public purpose and compensate affected persons in accordance with the law. It provides procedures to follow during the acquisition of land for public interest and provides for the "prompt payment of fair and adequate compensation" prior to taking possession of the land.

This gives government and local authorities a statutory power of compulsory acquisition of land in public interest and makes provision; inter alia, for "prompt payment of fair and adequate compensation" prior to the taking of possession of any privately-owned property.

2.1.2. National Land Policy (2013)

This new land policy addresses the contemporary land issues and conflicts the Country faces with. The vision of the policy is: "a transformed Uganda society through optimal use and management of land resources for a prosperous and industrialized economy with a developed services sector" while the goal of the policy is; "to ensure an efficient, equitable, and optimal utilization and management of Uganda's resources for poverty reduction, wealth creation, and overall socio-economic development."

Regarding the women's rights on ownership and inheritance of lands, this policy said that women in Uganda are generally unable to own or inherit land due to restrictive practices under customary land tenure or to economically difficulties for purchasing land rights in the market. In the Policy

Statement, the following sentences are mentioned to improve the women's rights;

- Government shall by legislation, protect the right to inheritance and ownership of land for women and children; and
- Government shall ensure that both men and women enjoy equal rights to land before marriage, in marriage after marriage and at succession without discrimination.

2.1.3. The Land Act, Cap 227

This addresses four issues namely; holding, control, management and land disputes. In regard to tenure, the Act repeats (in Section 3) provisions of Article 237 of the Constitution which vests all land ownership in the citizens of Uganda, to be held under customary, freehold, mailo or leasehold tenure systems. However, the Land Act provides for acquisition of land or rights to use land for execution of public works.

Regarding control of land, the Act reaffirms the statutory power of compulsory acquisition conferred on the government and local authorities under articles 26 (2) and 237(2) (a) of the Constitution (Section 43). Since the Act does not repeal the Land Acquisition Act No. 14 of 1965, it is assumed that this legislation, meets requirements of Article 26(2) of the Constitution that requires a law to be in place for payment of compensation and access to courts. The Act also requires that landowners manage and utilize land in accordance with regulatory land use planning (Sections 44 and 46).

Compensation is assessed in accordance with the valuation principles laid out in Section 77 (1), briefly outlined below:

- The value for customary land is the open market value of unimproved land;
- The value of buildings on the land is taken at open market value for urban areas, and depreciated replacement cost for rural areas;
- The value of standing crops on the land is determined in accordance with the district compensation rates established by respective District Land Board. Annual crops which could be harvested during the period of notice to vacate given to the landowner or occupier of the land are excluded in determining compensation values;

In addition, Section 77(2) of the revised edition (2000) provides for a disturbance allowance on top of the computed compensation amount as shown below:

- 30% of compensation amount if quit notice is given within 6 months.
- 15% of compensation amount if quit notice is given after 6 months.

The foregoing laws form the basis of compensation requirements necessary to fulfill Uganda's regulatory requirements.

2.1.4. Land Acquisition Act (1965)

This Act makes provision for procedures and method of compulsory acquisition of land for public purposes whether for temporary or permanent use. The Ministry responsible for land may authorize any person to enter upon the land, survey the land, dig or bore the subsoil or any other actions necessary for ascertaining whether the land is suitable for a given public purpose. However, compensation should be paid to any person who suffers damage as a result of such actions.

The Land Acquisition Act stops at payment of compensation to the affected people. In Uganda, it is not a legal requirement for a project to purchase alternative land for affected people. Once affected people are promptly and adequately compensated, the project proponent's obligations stop at this extent and there is no legal requirement that people should be moved or provided with alternative land. In Ugandan legal context, once people are compensated, they are expected to vacate affected properties without further claim.

2.1.4.1. Land Tenure Regimes and Transfer of Land

Article 237 of the Constitution, 1995, vests land ownership in the citizens of Uganda and identifies four land tenure systems, namely: customary; freehold; mailo; and leasehold. The incidents of these systems are detailed under Section 4 of the Land Act (Cap 227). Those relevant to the irrigation scheme project are:

Customary tenure: This tenure is governed by rules generally accepted as binding and authoritative by the class of persons to which it applies. In other words, customary regime is not governed by written law.

Land is owned in perpetuity: Customary occupants occupy former public land, and occupy land by virtue of their customary rights; they have proprietary interest in the land and are entitled to certificates of customary ownership which may be acquired through application to the Parish Land Committee and eventual issuance by the District Land Board.

Freehold tenure: This tenure derives its legality from the Constitution of Uganda and its incidents from the written law. It involves holding land in perpetuity or for a period less than perpetuity fixed by a condition. It also enables the holder to exercise, subject to the law, full powers of ownership.

Leasehold tenure: This tenure system is:

- Created either by contract or by operation of the law;
- A form under which the landlord of lessor grants the tenant or lessee exclusive possession of the land, usually for a period defined and in return for a rent;
- The tenant has security of tenure and a proprietary interest in the land.

Although only these latter forms of tenure are legally defined under the Land Act, the context of common law also recognizes the statute of "Licensee" or "Sharecroppers", these terms having similar meanings in practice.

Licensees are persons granted authority to use land within for agricultural production. Traditionally, such production would be limited to annual crops. Licensees have no legal security of tenure or any proprietary right in the land. Their tenure is purely contractual.

2.1.4.2. Right of spouse and children

The rights of spouse and children are protected under the Constitution of Uganda and the Land Act (Cap 227). The consent of spouse and children must be acquired prior to any transaction by the head of household on land on which the family ordinarily resides.

- Section 40 of the Land Act, 1998 requires that no person shall:

- Sell, exchange, transfer, pledge, mortgage or lease any land; or enter into any contract for the sale, exchange, transfer, pledge, mortgage or lease of any land;
- Give away any land inter vivos, or enter into any transaction in respect of land;
- In the case of land on which the person ordinarily resides with his or her spouse, and from which they derive their sustenance, except with the prior written consent of the spouse;
- In the case of land on which the person ordinarily resides with his or her dependent children of majority age, except with the prior written consent of the dependent children of majority age;
- In the case of land on which the person ordinarily resides with his or her dependent children below the majority age, except with the prior written consent of the Committee¹;
- In the case of land on which ordinarily reside orphans below majority age with interest in inheritance of the land, except with prior written consent of the Committee.

2.1.5. The Local Government Act (1997)

Local Government Act 1997 provides for a system of Local Governments based on the District. Under the District there are lower Local Governments and administrative units. This system provides for elected Councils whereby chairmen nominate the executive committee of each council, functions of which include:

- Initiating and formulating policy for approval by council;
- Overseeing the implementation of Government and Council policies, and monitoring and coordinating activities of Non-Government Organizations in the district; and
- Receiving and solving disputes forwarded to it from lower local governments.
- Because local leaders participate in above roles and will be crucial not only during compensation process but also project implementation, this law is important.

2.1.5.1. Local Governments Act, Cap 243

This Act provides for decentralized governance and devolution of central government functions, powers and services to local governments that have own political and administrative set-ups. Districts have powers to oversee implementation of development activities. They also have units such as District Land Tribunals responsible for solving complaints that arise from land acquisition valuations and compensation payments.

According to Section 9 of the Act, a local government is the highest political and administrative authority in its area of jurisdiction and shall exercise both legislative and executive powers in accordance with the Constitution.

District Local Government, through which the project will be implemented is Kween and Bulambuli, will be key stakeholders in RAP implementation and monitoring.

2.1.6. The Persons with Disability Act, (2006)

The Government published its National Policy on Disability in February, 2006. It states that “four in every 25 persons in Uganda are persons with disabilities”. Thus, the disability fraternity appreciates that by enacting the disability policy and other relevant pieces of legislation, the government of Uganda is fulfilling its constitutional obligation of addressing the plight of people with disabilities (NUDIPU, 2007).

The strategic objective of this policy is "promoting equal opportunities and enhanced empowerment, participation and protection of rights of persons with disabilities (PWDs) irrespective of gender, age and type of disability". Article 16 recognizes the rights of persons with disability and states that the "Society and the State shall recognize the right of persons with disability to respect and human dignity".

2.2. JICA Policy for Resettlement

The key principle of JICA policies on involuntary resettlement is summarized below.

TABLE 7: JICA POLICY FOR RESETTLEMENT

<ul style="list-style-type: none"> • The key principle of JICA policies on involuntary resettlement is summarized below. • Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives. • When, after such examination, avoidance is proved unfeasible, effective measures to minimize the impact and to compensate for losses must be agreed upon with the people who will be affected. • People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels. • Compensation must be based on the full replacement cost¹ as much as possible. • Compensation and other kinds of assistance must be provided prior to displacement. • For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12, Annex A. • In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people. • Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement action plans. • Appropriate and accessible grievance mechanisms must be established for the affected people and their communities. • Above principles are complemented by World Bank OP 4.12, since it is stated in JICA Guideline that "JICA confirms that projects do not deviate significantly from the World Bank's Safeguard Policies". Additional key principle based on World Bank OP 4.12 is as follows. • Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off date, asset inventory, and socio-economic survey), preferably at the project identification stage, to prevent a subsequent influx of enforcers of others who wish to take advantage of such benefits. • Eligibility of Benefits include, the PAPs who have formal legal rights to land (including customary and traditional land rights recognized under law), the PAPs who don't have formal legal rights to land at the time
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¹ Description of "replacement cost" is as follows.

Land	Agricultural Land	The pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes.
	Land in Urban Areas	The pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes.
Structure	Houses and Other Structures	The market cost of the materials to build a replacement structure with an area and quality similar or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labor and contractors' fees, plus the cost of any registration and transfer taxes.

of census but have a claim to such land or assets and the PAPs who have no recognizable legal right to the land they are occupying.

- Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based.
- Provide support for the transition period (between displacement and livelihood restoration).

Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, landless, elderly, women and children, ethnic minorities etc.

For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared.

In addition to the above core principles on the JICA policy, it also laid emphasis on a detailed resettlement policy inclusive of all the above points; project specific resettlement plan; institutional framework for implementation; monitoring and evaluation mechanism; time schedule for implementation; and, detailed Financial Plan etc.

RESETTLEMENT ACTION PLAN – ATARI IRRIGATION SCHEME

2.3. Gap Analysis between the JICA Guidelines and the Domestic Legal Framework

TABLE 8: GAP ANALYSIS BETWEEN THE JICA GUIDELINES AND THE DOMESTIC LEGAL FRAMEWORK

No.	JICA Guideline/ World Bank OP4.12	Laws of Uganda	Gaps between JICA Guidelines and Laws of Uganda	Project policy
1	Involuntary resettlement and loss of means of livelihood are to be avoided when feasible by exploring all viable alternatives. (JICA GL)	Act 1998 give the government and local authorities' power to compulsorily acquire land under Eminent Domain. Avoidance or minimization of resettlement is not discussed. Uganda Constitution requires that prompt, fair, and adequate compensation be paid prior to displacement.	Uganda has no specific guidelines on involuntary resettlement but even the two principle laws on land: the Constitution and the Land Act do not mention specific provision for avoidance or minimizing involuntary resettlement.	All viable alternatives including the design options have been explored to avoid involuntary resettlement and loss of livelihood. Justification for resettlement and measures taken to minimize impacts outlined in RAP.
2	When population displacement is unavoidable, effective measures to minimize impact and to compensate for losses should be taken. (JICA GL)	Uganda Constitution requires that prompt, fair, and adequate compensation be paid prior to displacement.	No gap	Measures taken to minimize impacts outlined in RAP.
3	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported, so that they can improve or at least restore their standard of living, income opportunities and production levels to pre-project levels. (JICA GL)	The Land Act regulates the computation of cash compensation for lands, structures and crops, including disturbance allowance.	Other types of compensation (besides cash) including alternative lands, house and etc. are not applicable in Uganda's law.	Other types of compensation: To meet various needs, the Project will offer options for the compensation including alternative lands, house as well as livelihood supports. Additionally, MAIF or PACC members can support to find out other land outside of Buffer Zone for renting to PAPs who currently renting land in Buffer Zone.
4	Compensation must be based on the Land Act, Cap 227 provides that:	The Land Act, Cap 227 provides that:	The project developer will ensure fair and	Project will provide compensation based on full

No.	JICA Guideline/ World Bank OP4.12	Laws of Uganda	Gaps between JICA Guidelines and Laws of Uganda	Project policy
11	Affected people are to be identified and recorded as early as possible in order to establish their eligibility through an initial baseline survey (including population census that serves as an eligibility cut-off).	The Land Acquisition Act (1965) requires asset inventories for the purpose of valuation by a registered valuer.	Although PAPs are required to be identified and served notices, there is no explicit provision for baseline census and socioeconomic surveys as a part of RAP process in Ugandan Law.	Project undertook household census and socio-economic surveys of all affected households using meaningful indicators, together with asset surveys. These were analyzed in the RAP and used for developing appropriate resettlement and livelihood restoration measures.
10	World Bank OP4.12 requires that the borrower develops a jurisdiction to deal with and settle land disputes. The Land Acquisition Act provides for aggrieved persons to appeal to the High Court.	The Land Act, 1998 had provided for land tribunals to resolve all land related issues. However, since their suspension in 2007, the High Court handles all land-related cases as provided for in the Land Acquisition Act.	National law allows for grievance procedures. But potential gap exists in terms of accessibility and affordability by PAPs if the High Court must handle land-related grievances.	Project has already developed through the formation of the PACC, PDCC and RAP Task Force Team. Comprehensive grievance mechanism for the project can still seek legal redress. Expedite receipt of entitlements and smooth resettlement without resorting to expensive and time-consuming legal action. If the grievance procedure fails to provide a settlement, complaints can still seek legal redress.
9	Appropriate participation of affected people must be promoted in planning, implementation, and monitoring of resettlement award.	The Land Acquisition Act makes provision for an enquiry whereby PAPs can make formal written claim and the assessment officer is obliged to conduct a hearing before making his award.	While PAP participation is inherent in the ESIA/RAP process, it contains a number of differences with the requirements of JICA Guidelines.	PAP participation has been provided for and promoted throughout the ESIA/RAP preparation process.
	Appropriate participation of affected people (JICA GL)	Access to Information Act, 2005 stipulates right of access to information. It states that person shall have a right to obtain access to an official document, other than an exempt document.	This is going to a continuous process which will be updated for key project stages of (i) planning; (ii) implementation; and (iii) monitoring and evaluation.	A8th June 2018.
	form, manner, and language that are understandable to the affected people (JICA GL)			
	Appropriate and accessible grievance mechanisms must be established for the affected people and their communities. (JICA GL)			
	The Land Act also states that traditional authority mediators must retain their jurisdiction to deal with and settle land disputes. The Land Acquisition Act provides for aggrieved persons to appeal to the High Court.			

RESETTLEMENT ACTION PLAN – ATARI IRRIGATION SCHEME

No.	JICA Guideline/ World Bank OP4.12	Laws of Uganda	Gaps between JICA Guidelines and Laws of Uganda	Project policy
8	When consultations are held, explanations must be given in a privacy of any other person.	Access to Information Act, 2005 Part II of the privacy of any other person.		Two (2) Stakeholder Engagements were conducted. The first one was already held on 1st February, 2018 and the second one was held in
7	In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. (JICA GL)	National regulations pertaining to stakeholder consultation are the Constitution of the Republic of Uganda, 1995 and the Access to Information Act, 2005. The Constitution of the Republic of Uganda, 1995, Section 41 of the Constitution of the Republic of Uganda, 1995, is on the right of access to information in the possession of State or any other organ or agency of the State except where the release of the information is likely to prejudice the security or sovereignty of the State or interfere with the right to the privacy of any other person.	While there are no explicit provisions for stakeholder and community consultation, there are consultations and disclosure, there are guidelines.	Formation of the PACC and PDCC has played a key role in Stakeholder Engagement. Information has provided to PAPs during consultations will be form, manner and language that they understand. MAIF/ JICA/ AES have developed a Stakeholder Engagement Plan as part of the RAP. Stakeholder engagement is already being implemented.
6	For projects that entail large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. (JICA GL)	Land acquisition act section 3 and 5 only provide for a declaration that that land is needed for public purpose and a notice to persons having an interest to be published, respectively.	Gap – There is no equivalence on preparation of resettlement plans and making them available to the public.	Preparation of resettlement plans will be undertaken in a consultative manner and final ARAP documents made available to the public.
5	of assistance must be provided prior to displacement. (JICA GL)	The Constitution says that no person from whom land is to be acquired shall be required to vacate until they receive full compensation (the exception could be with absentee landlords/Property owners).	The meaning of "other kinds of assistance" is not explicit in Uganda's law.	Compensation and necessary assistance on a case-by-case basis will be provided prior to displacement.
	Permanent buildings valued based on replacement cost and on top of this a Disturbance Allowance of 15% or 30%) is provided if more than six or less than six months' notice to vacate compensated assets, respectively, is issued to PAPs. Non-permanent buildings will receive a cash compensation based on District Compensation Rates plus disturbance allowance of 15% or 30% (depending on notice period). Tenants of structures: Repayment of unused rent, and six-month' notice to vacate structure.			replacement cost. This will include the payment of government valuation rates, a disturbance allowance and top-up allowance (based on current inflation rate) to compensate for the rise in price of construction materials. This should be enough to restore the livelihood of the PAP.
	on the full replacement cost as much as possible. (JICA GL)			

RESETTLEMENT ACTION PLAN – ATARI IRRIGATION SCHEME

No.	JICA Guideline/ World Bank OP4.12	Laws of Uganda	Gaps between JICA Guidelines and Laws of Uganda	Project policy
17	JICA GL indicates that "full replacement cost must be provided as much as possible"; no matter where it is.	The value of buildings on the land is taken at open market value for urban areas, and depreciated replacement cost for rural areas.	The gap exists on the "depreciated replacement cost for rural areas".	The Project will be provide compensation calculated as full replacement cost.
16	For projects that entail land acquisition or involuntary resettlement of fewer than 200 people, abbreviated resettlement plan is to be prepared. (WB OP4.12 Para.25)	Uganda law.	There is no explicit provision for RAP in Uganda law.	The Project has conducted RAP study and implemented the recommendations in conformity with JICA Guidelines and WB OP4.12.
15	Particular attention must be paid to the needs of the vulnerable groups among those displaced, especially those below the poverty line, children, ethnic minorities etc. (WB OP4.12 Para.8)	There is no distinction made on the basis of gender, age, or ethnic origin in Uganda law during compensation.	National law does not make provision for vulnerable assistance.	The project will conform to the requirements of WB OP4.12 and best practices during preparation of the RAP in regards to the needs of the vulnerable groups.
14	Provide support for the transition period (between relocation assistance, transitional support, or restoration). (WB OP4.12 Para.6)	There are no equivalent provisions on the provision of civic infrastructure.	There are no provisions for transitional support in Uganda.	MAAIF will be requested to provide transition allowance as the JICA/WB requirements farmers will not be allowed to go to their farms.
		there is no legal requirement or provision that respondent's obligations stop at this extent and alternative land.		

RESETTLEMENT ACTION PLAN – ATARI IRRIGATION SCHEME

No.	JICA Guideline/ World Bank OP4.12	Laws of Uganda	Gaps between JICA Guidelines and Laws of Uganda	Project policy
13	Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. (WB OP4.12 Para.11)	According to Land Acquisition Act, once the assessment office takes possession (ownership), the land immediately becomes project to purchase alternative land for affected people. Once affected people are promptly and adequately compensated, the project	The laws not explicit about land-based resettlement strategies in the Uganda law. Therefore "land for land" policy is not applicable in Uganda.	Land-based resettlement strategies for displaced persons whose livelihoods are land-based will be strongly considered as per the JICA/WB OP4.12 Para 11 since it is higher in standard compared to the Ugandan law.
12	Eligibility of benefits includes, the PAs who have formal legal rights to land (including customary and traditional land rights recognized under law), time of census but have a claim to such land or assets and the PAs who have formal legal rights to land at the time of census but have a claim to such land or assets and the PAs who have no recognizable legal right to the market value of the unimproved land. (WB OP4.12 Para.15)	The Constitution of Uganda, 1995 vests all land directly in the citizens of Uganda, and states that every person in Uganda has the right to own property.	National Laws focuses on people with land tenure rights and unclear on compensation for land users without rights and these are considered as illegal.	Dialogue with policy makers will be initiated to explore the possibility of giving compensation to those without formal legal rights or claims to such lands in order to conform to WB OP4.12. The Project will provide compensation based on full replacement cost for land owners. This includes the payment of government valuation rates, the payment of a disturbance allowance that is approved by the CGV and compensation allowance for the farmers who will rendered redundant during construction period as per schedule.
	off date, asset inventory, and socio-economic survey), preferably at the project identification stage, to prevent a subsequent influx of encroachers of others who wish to take advance of such benefits. (WB OP4.12 Para.6)			The cut-off date for the census survey began and for this project the cut-off date is 20th January 2018.

RESETTLEMENT ACTION PLAN – ATARI IRRIGATION SCHEME

2.4. Policy of Land Acquisition and Resettlement for the Project

TABLE 9 POLICY OF LAND ACQUISITION AND RESETTLEMENT FOR THE PROJECT

<ul style="list-style-type: none"> The Government of Uganda will use the Project Resettlement Policy (the Project Policy) for the PISD Atari Irrigation Project specifically because existing national laws and regulations have not been designed to address involuntary resettlement according to international practice, including JICA's policy. The Project Policy is aimed at filling-in any gaps in what local laws and regulations cannot provide in order to help ensure that PAPs are able to rehabilitate themselves to at least their pre-project condition. This section discusses the principles of the Project Policy and the entitlements of the PAPs based on the type and degree of their losses. Where there are gaps between the Uganda legal framework for resettlement and JICA's Policy on Involuntary Resettlement, practicable mutually agreeable approaches will be designed consistent with Government practices and JICA's Policy. Land acquisition and involuntary resettlement will be avoided where feasible, or minimized, by identifying possible alternative project designs that have the least adverse impact on the communities in the project area. Where displacement of households is unavoidable, all PAPs (including communities) losing assets, livelihoods or resources will be fully compensated and assisted so that they can improve, or at least restore, their former economic and social conditions. Compensation and rehabilitation support will be provided to any PAPs, that is, any person or household or business which on account of project implementation would have his, her or their; Standard of living adversely affected; Right, title or interest in any house, interest in, or right to use, any land (including premises, agricultural and grazing land, commercial properties, tenancy, or right in annual or perennial crops and trees or any other fixed or moveable assets, acquired or possessed, temporarily or permanently; Income earning opportunities; business, occupation, work or place of residence or habitat adversely affected temporarily or permanently; or Social and cultural activities and relationships affected or any other losses that may be identified during the process of resettlement planning. All affected people will be eligible for compensation and rehabilitation assistance, irrespective of tenure status, social or economic standing and any such factors that may discriminate against achievement of the objectives outlined above. Lack of legal rights to the assets lost or adversely affected tenure status and social or economic status will not bar the PAPs from entitlements to such compensation and rehabilitation measures or resettlement objectives. All PAPs residing, working, doing business and/or cultivating land within the project impacted areas as of the date of the latest census and inventory of lost assets(IOL), are entitled to compensation for their lost assets (land and/or non-land assets), at replacement cost, if available and restoration of incomes and businesses, and will be provided with rehabilitation measures sufficient to assist them to improve or at least maintain their pre-project living standards, income-earning capacity and production levels. PAPs that lose only part of their physical assets will not be left with a portion that will be inadequate to sustain their current standard of living. The minimum size of remaining land and structures will be agreed during the resettlement planning process. People temporarily affected are to be considered PAPs and resettlement plans address the issue of temporary acquisition. Where a host community is affected by the development of a resettlement site in that community, the host community shall be involved in any resettlement planning and decision-making. All attempts shall be made to minimize the adverse impacts of resettlement upon host communities. The resettlement plans will be designed in accordance with Uganda's National Involuntary Resettlement Policy (Land Acquisition act (1965) and JICA's Policy on Involuntary Resettlement. The Resettlement Plan will be translated into local languages and disclosed for the reference of PAPs as well as other interested groups. Payment for land and/or non-land assets will be based on the principle of replacement cost.
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- Compensation for PAPs dependent on agricultural activities will be land-based wherever possible. Land-based strategies may include provision of replacement land, ensuring greater security of tenure, and upgrading livelihoods of people without legal land titles. If replacement land is not available, other strategies may be built around opportunities for re-training, skill development, wage employment, or self-employment, including access to credit. Solely cash compensation will be avoided as an option if possible, as this may not address losses that are not easily quantified, such as access to services and traditional rights, and may eventually lead to those populations being worse off than without the project.
- Replacement lands, if the preferred option of PAPs should be within the immediate vicinity of the affected lands wherever possible and be of comparable productive capacity and potential. As a second option, sites should be identified that minimize the social disruption of those affected; such lands should also have access to services and facilities similar to those available in the lands affected.
- Resettlement assistance will be provided not only for immediate loss, but also for a transition period needed to restore livelihood and standards of living of PAPs. Such support could take the form of short-term jobs, subsistence support, salary maintenance, or similar arrangements.
- The resettlement plan must consider the needs of those most vulnerable to the adverse impacts of resettlement (including the poor, those without legal title to land, ethnic minorities, women, children, elderly and disabled) and ensure they are considered in resettlement planning and mitigation measures identified. Assistance should be provided to help them improve their socio-economic status.
- PAPs will be involved in the process of developing and implementing resettlement plans.
- PAPs and their communities will be consulted about the project, the rights and options available to them, and proposed mitigation measures for adverse effects, and to the extent possible be involved in the decisions that are made concerning their resettlement.
- Adequate budgetary support will be fully committed and made available to cover the costs of land acquisition (including compensation and income restoration measures) within the agreed implementation period. The funds for all resettlement activities will come from the Government.
- Displacement does not occur before provision of compensation and of other assistance required for relocation. Sufficient civic infrastructure must be provided in resettlement site prior to relocation. Acquisition of assets, payment of compensation, and the resettlement and start of the livelihood rehabilitation activities of PAPs, will be completed prior to any construction activities, except when a court of law orders so in expropriation cases.
- Organization and administrative arrangements for the effective preparation and implementation of the resettlement plan will be identified and in place prior to the commencement of the process; this will include the provision of adequate human resources for supervision, consultation, and monitoring of land acquisition and rehabilitation activities.
- Appropriate reporting (including auditing and redress functions), monitoring and evaluation mechanisms, will be identified and set in place as part of the resettlement management system. An external monitoring group will be hired by the project and will evaluate the resettlement process and final outcome. Such groups may include qualified NGOs, research institutions or universities.

3. SCOPE OF LAND ACQUISITION AND RESETTLEMENT

3.1. Population Census Survey

Population census was carried out of the PAPs in the project area. All together there are 2,007 PAPs of 490 PAHs, 251 of them are from Kween District and 174 from Bulambuli District. The 490 PAPs are the household heads who own the affected plots; they were asked how many people they had in their households. Results from the census survey show that the total number of people to be affected is approximately 2,007. Table 10 shows the summary of the land acquisition impact of the project per district.

TABLE 10: SUMMARY OF LAND ACQUISITION IMPACTS PER DISTRICT

District	Sub-county	Parish	Village	Number of PAHs	Number of Structures	Land (ha)
Kween	Ngenge	Sikwa	Amukokel	61	3	10,068
			Sikwo	151	0	12,948
			Soset	39	0	2,459
		Total (a)		251	3	25,475
Bulambuli	Bunambutye	Buwebele	Bunambale	145	7	20,663
			Buwechalo	27	0	1,108
			Bukhayaki	2	0	0,544
		Total (b)		174	7	23,939
Buffer Zone	Bunambutye			32	0	4,990
				33	0	7,071
				65	0	12,061
		Grand Total (a) + (b) + (c)		490	10	59,851

3.1.1. Project Affected Persons

Altogether the project is going to affect a total of 490² households who own land in the project area. Only 2 PAHs plus a fence of private school (1 PAH) out of the 490 will be both physically required to move and economically affected, the remaining 487 will mainly lose land that have been using for farming as the main source of their livelihood.

3.1.2. Project Affected Structures

As mentioned above, the PAP census established that the number of Project Affected Structures is 10. Three of the structures such as two temporary residential houses and one set of school fences are found in Amukokel Village in Kween District. These structures are found on private land, two temporary residential houses of belong to one household while the other belongs to a private school.

² A full List of all plus their photograph is Appended on this report as Volume two.

Other seven of the affected structures are in Bulambuli District in Bunambale Village; these are temporal structures such as, business structures, commercial shades, latrines and bathrooms belonging to one household. These 3 PAHs who are also referred to physically displaced will have be provided with enough compensation to allow them find alternative land and also give them enough time to reconstruct their structures before construction of the project takes place.

TABLE 11: NUMBER OF PROJECT AFFECTED UNITS AND PROJECT AFFECTED PERSONS

District	Sub-county	Parish	Village	Structure Type	No. of Affected Structures
Bulambuli	Bunambutye	Buwebele	Bunambale	Temporarily Commercial House: Roof: Galvanized Corrugated Iron sheet (GCI) on local poles Celling: Nil Walls: Mud and wattle Doors: Timber Windows: Timber Floor: Earth Condition: Fair	1
				Shade for Commercial 1: Roof: Grass thatched Walls: Wooden poles supporting Doors: Nil Windows: Nil Floor: Earth Condition: Fair	1
				Shade for Commercial 2: Roof: Grass Thatched Walls: Wood end poles supporting Doors: Nil Windows: Nil Floor: Earth Condition: Fair	1
				Temporarily Store House: Roof: Grass thatched Celling: Nil Walls: Mud and wattle Doors: Timber Windows: Nil Floor: Earth Condition Fair	1
				Temporarily Kitchen: Roof: Grass thatched Celling: Nil Walls: Mud and wattle Doors: Timber Windows: Nil Floor: Earth Condition Fair Pit latrine 1:	1

District	Sub-county	Parish	Village	Structure Type	No. of Affected Structures	
Kween	Ngenge	Sikwa	Amukokel	Roof: Grass thatched Walls: Mud and wattle Doors: Nil Floor: Earth Condition: Fair	1	
				Pit latrine 2: Roof: Grass thatched Walls: Mud and wattle Doors: Nil Floor: Earth Condition: Fair	1	
				Bathroom: Roof: Nil Walls: Enclosure of grass tied to wooden poles Doors: Nil Windows: Nil Floor: Earth Condition: Fair	1	
				-	-	
				Buwechalo	-	
				Bukhayaki	-	
				Sub- total (a)	-	7
				Temporarily Residential House: Roof: GCI* on local poles Ceiling: Nil Walls: Mud and wattle Doors: Battered timber Windows: Nil Floor: Earth Condition: Fair	1	
				Temporarily Residential House: Roof: Grass thatched Ceiling: Nil Walls: Mud and wattle with no finish yet Doors: Battered timber Windows: Nil Floor: Earth Condition: Fair	1	
				Public structures: School Fence: Barbed wire on local poles	1	
Sikwo	-					
Soset	-					
Sub- total (b)	-	3				
Grand Total (c) = (a) + (b)	-	-	-	-	10	

Note: There is no squatter in the project area.

Some of the photos showing the structures that will be affected are shown in figure 5 below.

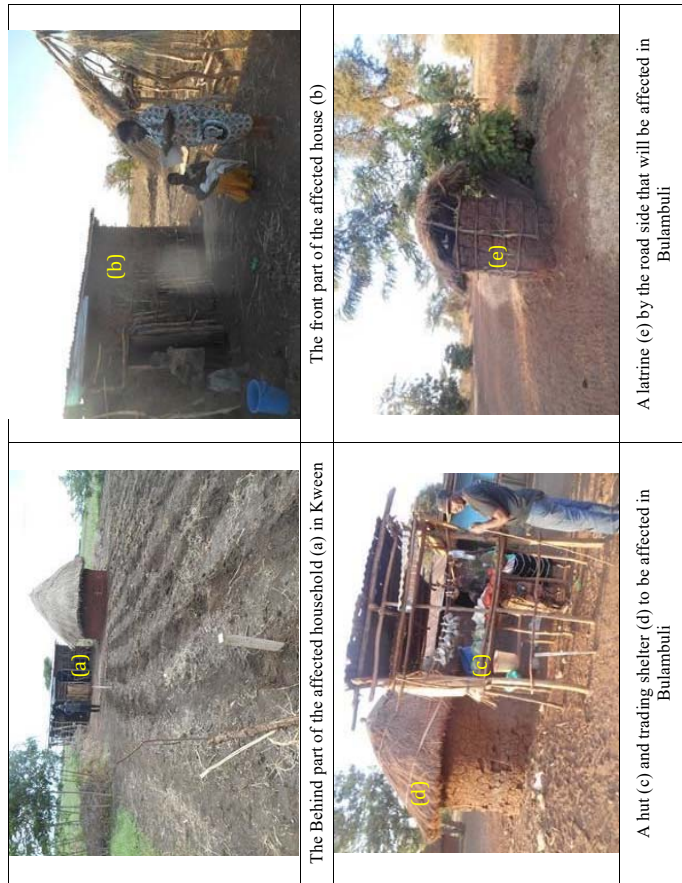


FIGURE 4: PICTURE OF SOME OF THE AFFECTED STRUCTURES/BUILDINGS

3.1.3. Project Acquired Lands

Approximately a total of 59,851 ha of land including the lands of the buffer zone will be acquired by the Project. The lands acquired for construction of facilities such as irrigation / drainage canals, road, dyke, etc. covers approximately 80% of the total acquired land area, while the lands of the buffer zone is almost 20%. The total number of land to be affected in Kween District is 29,386 ha while in Bulambuli is also 30,465 ha. Details of land affected per village in both districts are shown in table 8 below.

TABLE 12: SIZE AND AMOUNT OF TOTAL LAND AFFECTED IN THE PROJECT AREA

No.	District	Acquired Land (ha)		Total (ha)
		For facilities	Buffer Zone	
1	Bulambuli	22,315	7,071	29,386
2	Kween	25,475	4,990	30,465
Total		48,790 (80%)	12,061 (20%)	59,851 (100%)

3.1.4. Agricultural Products and Trees affected in the Project Area

The crops and trees that will be in the project area include; Avacado, Mature Mango Trees, Banana Clumps, Paw Paws, Orange trees, Jack Fruit Trees, Coffee Trees, Eucalyptus Trees, Cereveria, Fig Trees, Acacia Trees and Bust Trees. All together a total of 2024 crops and trees will be lost due the implementation of the irrigation project in Atari area. Sikwo Village in Kween District will lose the highest number of crops and trees (1,875) while Bukhayaka village in Bulambuli District will lose none as shown in the table 10 below.

TABLE 13: CROPS AND TREES AFFECTED IN THE PROJECT AREA

No.	Location (Village/Sub District)	Type of Plants	Sub-Total	Total	
1	Amukokel Village	Acacia trees	Permanent	90	90
		Avacado	Annual	1	
		Mature Mango Trees	Permanent	35	
		Banana Clumps	Permanent	1,669	
		Eucalyptus Trees	Permanent	15	
2	Sikwo Village	Paw Paws	Annual	72	1,875
		Fig Trees	Permanent	4	
		Accacia Trees	Permanent	156	
		Jack Fruit Trees	Permanent	1	
		Greveria	Permanent	1	
		Coffee Trees	Permanent	8	
		Bush Trees	Permanent	3	
		Eucalyptus Trees	Permanent	2	
		Fig Trees	Permanent	19	
		Banana Clumps	Permanent	22	
3	Soset village	Mango trees	Permanent	10	59
		Bush Trees	Permanent	2	
		Acacia Trees	Permanent	4	
		Total in Kween District		2024	
		Total in Bulambuli District		555	
Total		2,579			
1	Buwembale Village	Avacado	Annual	2	529
		Mature Mango Trees	Permanent	6	
		Banana Clumps	Permanent	221	
		Eucalyptus Trees	Permanent	4	
		Paw Paws	Annual	1	
1	Bulambuli District	Fig Trees	Permanent	1	2024
		Accacia Trees	Permanent	26	
		Jack Fruit Trees	Permanent	2	
		Orange Trees	Permanent	69	

No.	Location (Village/Sub District)	Type of Plants	Sub-Total	Total
2	Buwachalo Village	Bush Trees	Permanent	195
		Banana clumps	Permanent	24
		Bush Trees	Permanent	2
3	Bukhayaki Village	-	0	0
Total in Bulambuli District			555	
Total			2,579	

3.1.5. Crops Grown on the Affected Land

The affected land is mainly being used for growing crops and grazing cattle. The main crop grown in the project area is maize over all at (77%), followed by rice and beans at (46%), then water melon and tomatoes at 19%, Yams (13%), bananas and sunflower (12%). Other crops grown on a small scale include; Sim-sim, Sorghum, Sweet potatoes, Millet, Mangoes, Cassava, Sugarcane, Vegetables, Cocoa, Onions, Peas, Oranges, Wheat, Ground nuts and Ginger. Animals such as cows, goats and sheep are also grazed in the project area. All the above mentioned PAPs own their property legally.

3.1.6. Cut-off Date

PAPs shall be provided resettlement assistance in lieu of compensation for the land they occupy, and other assistance, as necessary if they occupied the project area prior to a cut-off date established. Persons who encroach on the area after the cut-off date will not be entitled to compensation or any other form of resettlement assistance. The cut-off date is the first date of the census and this is 20th January, 2018.

PAPs were clearly informed that persons who will claim ownership of any plot after this will not be compensated. During the survey to identify the affected plots, the surveyor and valuer moved together with the owners of plots including the local leaders to help confirm ownership of the plots. Thereafter the identified PAPs were given a valuation form including the size of land affected and the properties to be compensated. After the signed on the form to acknowledge that the information therein is true and the form was countersigned by the local leaders and PACC Chairmen of each district. This measure plays a big role in discouraging illegal entrants to claim for compensation, because during the census only those PAPs with the signed form were the ones interviewed.

Uganda does not have a policy on updating the census once it is delayed, however, following the JICA and the World Bank OP 4.12 guidelines on compensation that the data is required to

be updated, if the land acquisition is not implemented within two years after the population census survey.

3.2. Socio-Economic Baseline

This section describes the existing social and economic conditions within the Project Area. These conditions will be used to establish the baseline against which future demographic conditions, and the effectiveness of RAP interventions, to enable displaced households to restore and improve their quality of life, will be measured.

The socio-economic survey describes basic information on the standard characteristics and livelihood of households to be compensated. The information includes; production system, occupation, structure of household, incomes from formal/informal economic activities, standards of living, social and cultural characteristics etc. The objective of collecting the socio-economic data of the affected persons assists to know the social structure and distribution for the purposes of planning the resettlement, relocation, plan measures of livelihood and rehabilitation of the affected persons.

3.2.1. Number of Respondents Interviewed

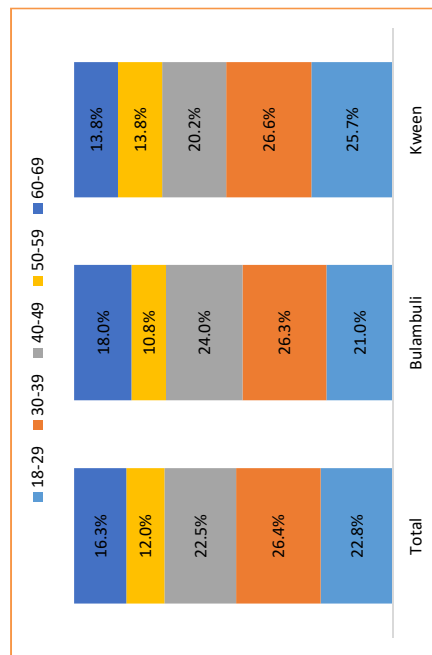
A sample of 276 households was sampled from the two parishes of Sikwa and Buwebere of Kween and Bulambuli districts respectively as shown in the table 11 below. Household lists were got from the Local Council Chairpersons and samples were picked while using a sample space of 4 households. The table below shows the percentage sampled from each village. The total percentage sample was 38.44%.

TABLE 14: NUMBER OF HOUSEHOLD HEADS INTERVIEWED

District	Sub/county	Parish	Village List	No. & %age HHH Interviewed per Sample	%age of HHH sampled per Village
Bulambuli (167, 60.5%)	Bunambutye (167)	Buwebele(167)	57 Bubyaya B	Bubyaya B (28, 16.8%)	49.1%
			85 Bukhayaki	Bukhayaki (66, 39.5%)	77.6%
			158 Bunambale	Bunambale (46, 27.5%)	29.1%
			102 Buwechalo	Buwechalo (27, 16.2%)	26.5%
Kween (109, 39.5%)	Ngenget(109)	Sikwa(109)	97 Amokokel	Amokokel (35, 32.1%)	36%
			156 Sikwo	Sikwo (51, 46.8%)	32.6%
			63 Soset	Soset (23, 21.1%)	36.5%
276	276	276	718	276	38.44%

3.2.2. Age of Household Heads

The majority of the respondents were between 30-39 (26.4%) followed by 18-29 who were 22.8%, 40-49 with 22.5%, 60-69 with 16.3% and the age group with the least respondents was 50-59 with 12%. However, there are variations in the figures presented for each district. While for both districts, the majority of the respondents were between 30-39 (26.3% for Bulambuli and 26.6% for Kween), there are marked differences for some age groups. Although in Bulambuli respondents were aged between 60-69 years were 18%, which is higher than 13.8% for Kween, for the 18-29 age group, Kween had more respondents (25.7%) compared to Bulambuli with 21%. See results in figure 6 below.



Sources: Primary Data January 2018

FIGURE 5: AGE OF HOUSEHOLD HEADS INTERVIEWED

3.2.3. Tribe of Household Heads

Results from the survey show that there are many tribes in the project area, in Bulambuli district, the most predominant tribe is Bagisu (87%) while in Kween the predominant tribe is Subiny (65%). Other tribes found in the project area include: Bagwere, Basoga, Baktusi, Banyole and the Iteso. See figure 7 below.

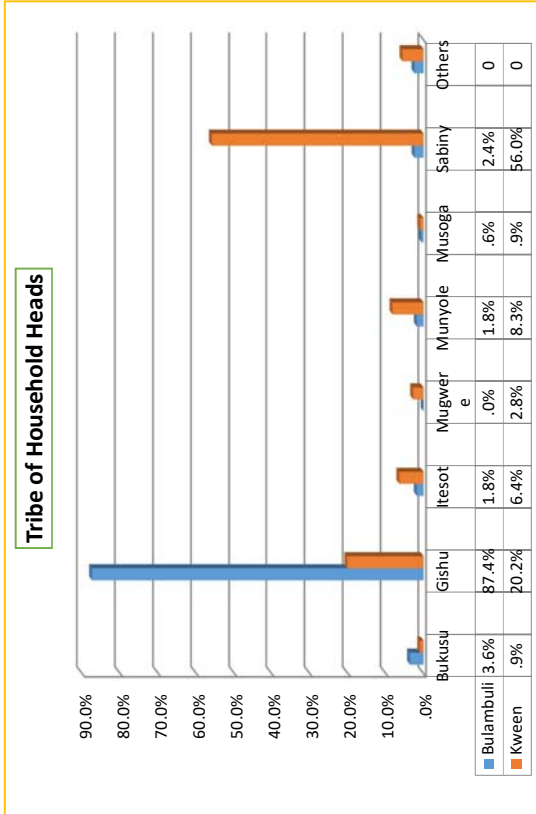
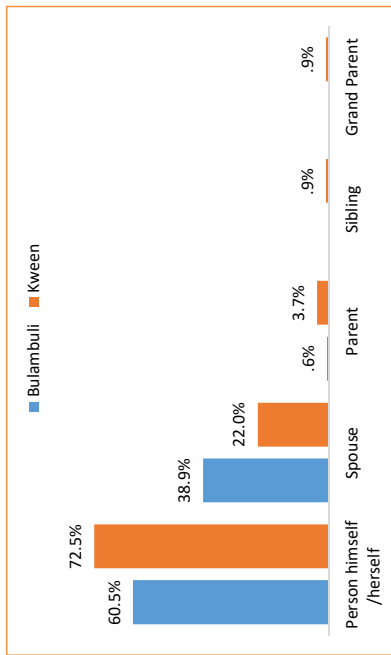


FIGURE 6: TRIBE OF HOUSEHOLD HEADS INTERVIEWED

3.2.4. Relationship to Household Head

Results from the survey indicate that the majority of the respondents were household heads (60.5% in Bulambuli and 72.5% in Kween). Respondents who were related to the household head through marriage /marital relations were 38.9% in Bulambuli and those in Kween were 22%. Respondents for who the household head was a parent constituted 0.6% in Bulambuli and 3.7% in Kween. There were no respondents related to household head as siblings in Bulambuli and for this category there were 0.9% in Kween. Respondents who were grandparents to the household head were 0.9 in Kween and none in Bulambuli. See figure 8 below.



Source: Primary Data January 2018

FIGURE 7: RELATIONSHIP OF RESPONDENT TO THE HOUSEHOLD HEAD

3.2.5. Marital status of Household Head

The majority of respondents were married or cohabiting (86.85% in Bulambuli and 78.9% in Kween). Respondents who had never married in Kween were 4.6% while in Bulambuli had there was none in this category. For those separated, in Bulambuli they were 7.2% and 11% in Kween. Those widowed constituted 6% of the respondents in Bulambuli and 5.5% in Kween as shown in figure 9 below.

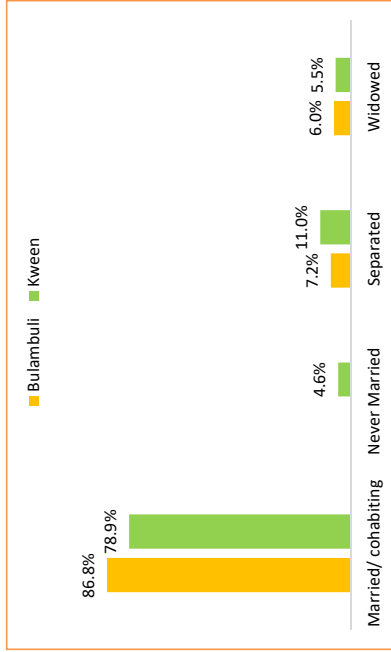
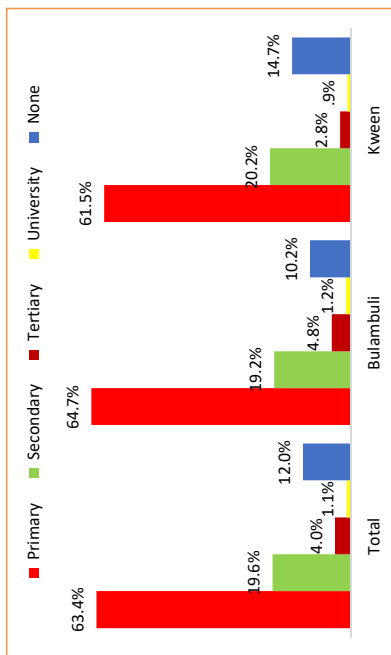


FIGURE 8: MARITAL STATUS OF HOUSEHOLD HEAD

3.2.6. Highest Level of Education Attained

Results from the study shows that out of the total number of respondents, 63.4% had finished primary level, 19.6% attained secondary level while 4% had been to tertiary institutions, 1.1% were university graduates and 12% had never been to school. When the proportions for the two districts are compared, there does not seem to be marked variations especially among those who attained primary and secondary education. Respondents who attained tertiary education in Bulambuli were more than those in Kween (4.8% and 2.8% respectively). Kween district had more respondents (14.7%) who had never had any education compared to Bulambuli with 10.2%. See figure 10 below.

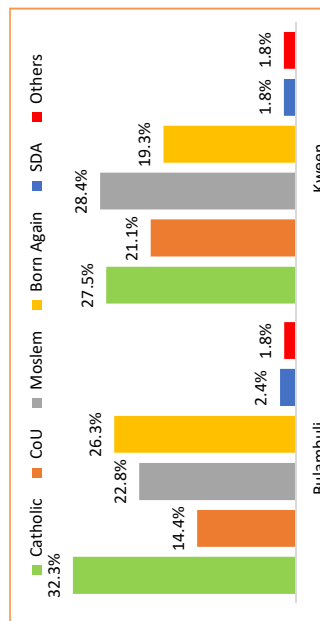


Source: Primary Data January 2018

FIGURE 9: HIGHEST LEVEL OF EDUCATION ATTAINED BY HOUSEHOLD HEAD

3.2.7. Religious Affiliation

As shown in figure 11 below, the dominant religion in Bulambuli was Catholic (32.3%) followed by Born Again (26.3%), Islam (22.8%) and SDA (2.4%) while in Kween, Islam dominated (28.4%) followed by Catholic (27.5%), Church of Uganda (21.1%) and SDA (1.8%). Other religions constituted 1.8 % in both Bulambuli and Kween.



Source: Primary Data January 2018

FIGURE 10: RELIGIOUS AFFILIATION OF HOUSEHOLD HEADS

3.2.8. Main Occupation

The major occupation of the people in the study districts was peasant farming (93.6% in Kween and 90.4% in Bulambuli). Table 11 indicates in Kween, people were evenly distributed in private employment (1.8%), public service (1.8%) and trade (1.8%) whereas in Bulambuli private employment had 4.2%, followed by public service (3%) and trade (2.4%). The occupation with least people was boda boda, with Kween having 0.9% and none in Bulambuli. See figure 11 below.

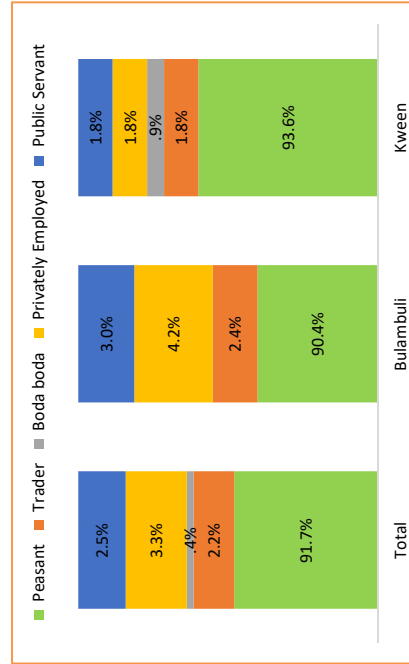
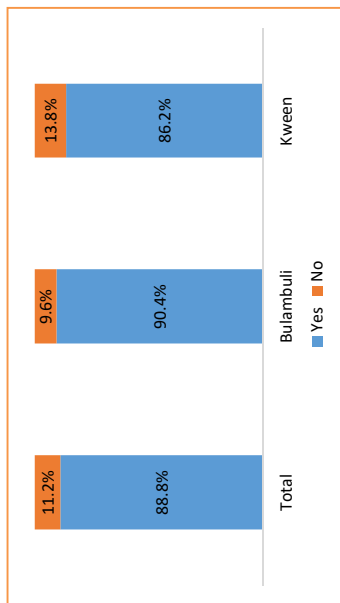


FIGURE 11: MAIN OCCUPATION OF HOUSEHOLD HEADS

3.2.9. Household always lived in the project Area

Asked if they always lived in the project area, most of the households (88.8%) in the project districts visited always lived in their current household. Those who did not always live in their

current household were very few (11.2%). See figure 13 below.



Source: Primary Data January 2018

FIGURE 12: HOUSEHOLD LIVES IN THE PROJECT AREA

3.2.10. How long has the household head lived in this household?

Table 12 below shows that most of the household heads (44.6%) had lived in those households since birth while (38.8%) had lived there within a period of less than ten years. There were few people who had lived in their current households between 0-10 years (12.0%) and over 20 years (4.7%).

TABLE 15: YEARS HOUSEHOLD HAS SPENT IN THE PROJECT AREA

	Total (276)	Bulambuli (167)	Kween (109)
Since birth	44.6%	38.3%	54.1%
0-10 years	38.8%	41.9%	33.9%
10-20years	12.0%	13.2%	10.1%
Over 20 years	4.7%	6.6%	1.8%

3.2.11. Ownership of Dwelling Place

Table 13 below indicates that in total, 81.5% of the people in both districts owned the homes they lived in and those who rented were 18.5%. The mean rent for the two district was 16,286; 17,857 for Bulambuli and 15,107 for Kween.

TABLE 16: OWNERSHIP OF DWELLING PLACE

	Total	Bulambuli	Kween
Owned	81.5%	86.8%	73.4%
Rented	18.5%	13.2%	26.6%
# Renting	49	21	28
Mean Rent	16,286	17,857	15,107

Source: Primary Data January 2018

3.2.12. Type of Houses Owned

The types of houses found in the project area are presented in table 14 below as; independent house, apartment in building, tenement, hut and semi-permanent. Out of the 276 households interviewed, of these 167 were in Bulambuli, of which 49.7% were huts, 51.4% independent houses, 3% tenants and no semi-permanent houses. Kween had 109 houses, out of these 57.8% were independent houses, while 22% were huts, 10.1% semi-permanent houses, 8.3% were tenants. Kween had more houses roofed with iron sheets (58.7%) than Bulambuli (43.1%). Grass thatched houses in Bulambuli constituted 56.9% and in Kween (41.3%). Most houses had wall made of mud and wattle (96.4% in Bulambuli and 85.3% in Kween). Houses with walls made of sun dried/unburnt bricks were found only in Kween and these were few (11.9%). Brick or cement walls were found only in Bulambuli but there were very few houses made up of these (3.6%). It was only Kween that had houses with walls made up of stone with mud (2.8%). The floor of most of the houses was made of earth, sand or cow dung (99.1% in Kween and 95.2% in Bulambuli).

3.2.13. Status of Houses

TABLE 17: TYPE OF HOUSES OWNED

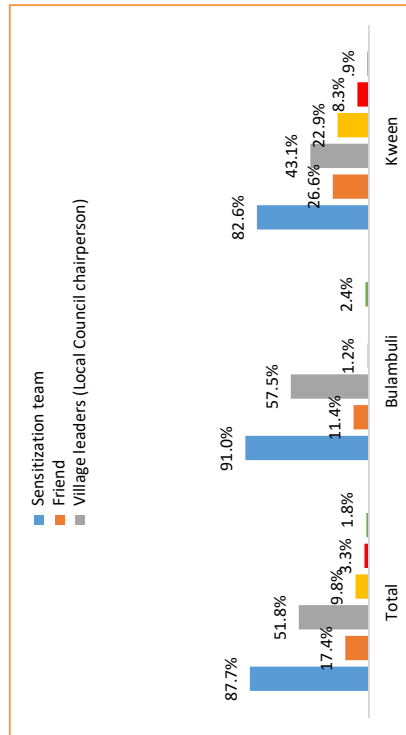
	Total	Bulambuli	Kween
Independent house	51.4%	47.3%	57.8%
Type of main house			
Tenement (Muzigo)	5.1%	3.0%	8.3%
Hut	38.8%	49.7%	22.0%
Semi-permanent	4.0%		10.1%
Roof			
Iron sheets	49.3%	43.1%	58.7%
Grass thatched	50.7%	56.9%	41.3%
Walls			
Brick or cement block	2.2%	3.6%	
Stone with mud	1.1%		2.8%

	Total	Bulambuli	Kween
	276	167	109
Adobe (sun-dried brick/unburnt bricks)	4.7%		11.9%
Quineha (mud and wattle)	92.0%	96.4%	85.3%
Cement screed	3.3%	4.8%	.9%
Earth, sand or cow dung	96.7%	95.2%	99.1%

Source: Primary Data January 2018

3.2.14. Information about the Project

Results from the survey shows that people in the project districts got information about the project from the following sources; sensitization team (87.7%), village leaders (51.8.7%), friends (17.4%), PACC members (9.8%) and JICCA (3.3%). There were more people in Bulambuli (2.4%) than in Kween (0.9%) who had no information about the project. See figure 14 below.



Source: Primary Data January 2018

FIGURE 13: INFORMATION ABOUT THE PROJECT

3.2.15. Impacts of the project

People in the project area were of the positive and negative impacts of the project, results in table 15 below indicates that more people were of the view that the project had more positive effects than the negative ones. The positive effects included improved infrastructure and access farm land (77.5%), increased yield (63.4%), full and fair compensation (24.3%) and employment opportunities/improved life (4.7%).

The negative effects were; loss of land and/or crops (69.6%), inadequate compensation (17.8%), social disruption and loss of social ties (17.4%), loss of buildings (13.8%) and damage to local roads (9.8%). Major differences in the effects of the project between the two districts were in terms of increased yield (69.7% for Kween and 69.3% for Bulambuli) and employment opportunities/improved life (10.1% for Kween and 1.2% for Bulambuli). On the other hand, some negative effects were more severe in Kween than Bulambuli and the vice versa. Bulambuli suffered more loss of buildings (20.4%) than Kween (3.7%) while there were more people who complained of inadequate compensation in Kween (28.4%) than in Bulambuli (10.8%).

TABLE 18: IMPACTS OF THE PROJECT

Effects	Total	Bulambuli	Kween
Loss of land and/or crops.	69.6%	71.3%	67.0%
Construction damage to local roads is negative	9.8%	9.6%	10.1%
Loss of buildings	13.8%	20.4%	3.7%
Severance of social ties hence social disruption	17.4%	15.0%	21.1%
Inadequate compensation	17.8%	10.8%	28.4%
None	25.7%	26.9%	23.9%
Improved infrastructure and access farm land	77.5%	75.4%	80.7%
Full and fair compensation	24.3%	24.6%	23.9%
Increased yields	63.4%	59.3%	69.7%
Employment opportunities/ Improved life conditions	4.7%	1.2%	10.1%
None	4.3%	6.6%	.9%

Source: Primary Data January 2018

3.2.16. Commonest Telecom used

Figure 15 below, reveals that the commonest telecom used in the districts visited was MTN (88.5%) followed by Airtel (6.1%) and WARID (2.7%). The least used telecoms were UTL (0.4%), Africell/Orange (0.4%) and Safaricom (0.4%).

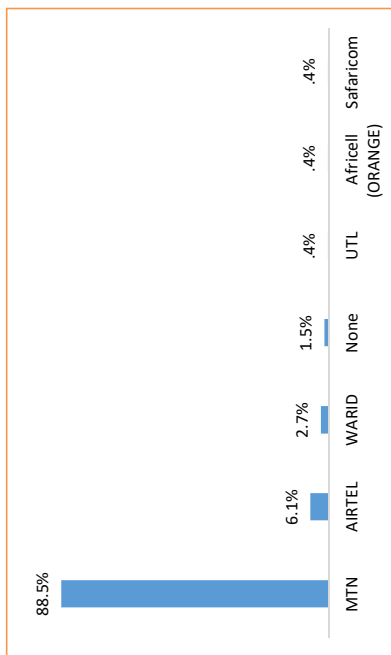


FIGURE 14: COMMONEST TELECOM USED

3.2.17. Water and Sanitation

Different aspects of sanitation were covered including; latrine usage, waste products, main water source, distance to water source, how water for drinking is treated and responsibility for fetching water. See table 16 below for details.

3.2.18. Latrine Usage

The most common latrine usage in both district was pit latrine (75.4%) followed by the bush (18.1%). Other types were communal latrine (2.5%) digging a hole in the ground (2.2%). The VIP was the least used (0.9% in Kween) and no usage in Bulambuli. More people used pit latrine in Bulambuli (85.6%) than in Kween (59.6%). Less people used the bush in Bulambuli (10.8%) than in Kween (29.4%). The bush was not used in Bulambuli as a latrine.

3.2.19. Waste Products

Waste products were disposed of in four ways; rubbish pit, back yard, dumping anywhere and burning. The most used method for waste disposal in Bulambuli was a rubbish pit (73.1%), but this was used by few people in Kween (30.3%). In Kween, the most common method of waste disposal was dumping everywhere (53.2%). Burning waste products was least used in the two districts (4.2% in Bulambuli and 1.8% in Kween).

3.2.20. Main Water Source

The main water source in both districts was the borehole (96%). Some few people drew water from rivers/lakes (2.8% in Kween and 1.2% in Bulambuli) and pond/unprotected well/spring (0.9% in Kween and .0% in Bulambuli)

3.2.21. How water for drinking is treated

Three methods for treating water for drinking were considered; boiling, drinking bottled water and treating with purified tablets but it was found out that the majority of the people did not use any of these methods (83%). Boiling water was used by few people (19.3% in Kween and 10.8% in Bulambuli). Only 3% in Bulambuli and 0.9% in Kween treated drinking water with purified tablets.

3.2.22. Distance to water source

The distance to the water source for most people was between 100-500m (56% in Kween and 53.9% in Bulambuli). People in Kween had more access to water sources than in Bulambuli.

3.2.23. Responsibility for fetching water

In both districts the responsibility of fetching water fell mostly on women (75.9% in Bulambuli and 67% in Kween). Other household members who participated in participated in fetching water were boy children (9.0% in Bulambuli and 7.3% in Kween), adult men (6.6% in Bulambuli and 9.2% in Kween) and girl children (6.6% in Bulambuli and 9.2% in Kween). Use of hired labour for fetching water was very low at 1.8% in each of the two districts.

TABLE 19: WATER AND SANITATION

	Total	Bulambuli	Kween	
	276	167	109	
Latrine usage	Bush	18.1%	10.8%	29.4%
	Hole in ground	2.2%	.0%	5.5%
	Communal Latrine	2.5%	1.2%	4.6%
	Pit latrine	75.4%	85.6%	59.6%
	VIP	.4%	.0%	.9%
Sanitation	other (specify)	1.4%	2.4%	.0%
	Rubbish pit	56.2%	73.1%	30.3%
	Back yard	14.9%	15.0%	14.7%
	Dump anywhere	25.7%	7.8%	53.2%
	Burn	3.3%	4.2%	1.8%
Water	Pond/unprotected well/spring	.4%	.0%	.9%
	borehole	96.0%	97.6%	93.6%
	Tap water (stand pipe)	1.4%	.6%	2.8%
	Piped water in house	.4%	.6%	.0%

	Total	Bulambuli	Kween
	276	167	109
Distance to water source	River/Lake less than 100m	1.8%	2.8%
	100-500m	16.3%	26.6%
	500m - 1km	54.7%	56.0%
	1-2km	18.8%	11.9%
	Over 2km	8.3%	4.6%
How water for drinking is treated	Boil	1.8%	.9%
	Drink bottled water	14.1%	19.3%
	Treat with Purified tablets	.7%	1.8%
	None	2.2%	.9%
Responsibility for fetching water	Boy child	83.0%	78.0%
	Girl child	8.4%	7.3%
	Adult men	7.6%	9.2%
	Adult women	7.6%	9.2%
	Hired help	72.4%	67.0%
Everyone	1.8%	1.8%	
	2.2%	.0%	5.5%

Source: Primary Data January 2018

3.2.24. Grievance Redress Mechanism

Results from the survey show that when people have land disputes they seek redress from mostly local council committees (69.6%) as indicated in table 17 below. However, people who seek help from family members were more in Bulambuli (40.7%) than in Kween (15.6%). Other structures where people seek redress is clan elders/members (15.6% in Bulambuli and 17.4% in Kween); community elders/members (10.2% in Bulambuli and 13.8% in Kween) and police (4.2% in Bulambuli and 16.4% in Kween). In both districts the land boards at the various local council levels were less used for seeking redress for land disputes. Only 0.4% seek redress from the district land board; 0.7% from sub-county land board and 1.4% from parish land board.

TABLE 20: GRIEVANCE REDRESS MECHANISM SOUGHT BY RESPONDENTS

Where redress is sought	Total(276)	Bulambuli(167)	Kween(109)
Local Council Committees	69.6%	71.3%	67.0%
Family Members	30.8%	40.7%	15.6%
Clan Leaders/Members	16.3%	15.6%	17.4%
Community Elders/Members	11.6%	10.2%	13.8%
Police	9.1%	4.2%	16.5%
Parish land Board	1.4%	1.8%	.9%
Sub-county land Board	.7%		1.8%
District land Board	.4%		.9%

3.2.25. Sources and Uses of Energy

Table 18 below indicates that the different types of energy used by people in the household are kerosene, car battery, LPG, firewood, charcoal, engine, gen-set, solar system and manual. Kerosene is used mostly for lighting (81.2%) and less for cooking (0.4%), grinding (3.6%) and radio (0.4%). Most households use firewood for cooking (95.3%). Few people use charcoal for cooking (11.6%) and lighting (0.4%). Engine is used mainly for grinding/milling (71.7%) and for machinery (3.6%) and lighting (0.4%) but these were very few households. Solar system is used for many activities in the household but mostly for cell phone charging (72.5%). Other activities for which the solar system was used included: lighting (21.75), Radio (10.95) and TV (9.4%). Manual is used in few households mostly for equipment (18.8%), machinery (13.8%) and grinding (13%). Dry cell was used mostly for radio (59.4%). Gen-set is used by very few households for machinery (2.5%), cell phone charging (1.4%), grinding (1.1%), radio (0.4%) and TV (0.7%). The types of energy used by the least number of households were gen-set, car battery and LGP.

There were no major differences in the use of the various types of energy for the household activities between the two project districts.

TABLE 21: SOURCES OF ENERGY USED BY HOUSEHOLD FOR VARIOUS ACTIVITIES

Activities	Lighting	Cooking	Grinding/milling	Radio	TV	Cell phone	Equipment	Machinery
Kerosene	81.2%	.4%	3.6%	.4%				
Car Battery			.7%	1.1%	.4%			
Dry cell	2.5%		.7%	59.4%	.7%			
LPG					2.2%			
Firewood			95.3%					
Charcoal	.4%		11.6%					
Engine	.4%		71.7%					3.6%

Activities	Lighting	Cooking	Grinding/milling	Radio	TV	Cell phone	Equipment	Machinery
Gen-set	1.1%	.4%	1.1%	.4%	.7%	1.4%		2.5%
Solar system	21.7%	.4%	4%	10.9%	9.4%	72.5%	1.1%	.4%
Manual	.7%	13.0%	4%			.4%	18.8%	13.8%
NA		12.3%	28.6%	88.8%	23.2%	80.1%	81.2%	
Bulambuli								
Kerosene	77.2%	.6%		.6%				
Car Battery				1.2%				
Dry cell	3.6%			50.3%		3.6%		
LPG								
Firewood		97.6%						
Charcoal	.6%	9.0%						
Engine	.6%		93.4%					
Gen-set		.6%				1.8%		
Solar system	24.6%			13.2%	7.8%	73.1%	1.2%	
Manual	1.2%	1.2%		.6%			8.4%	4.2%
NA		4.8%	35.9%	91.0%	22.8%	90.4%	95.8%	
Kween								
Kerosene	87.2%	9.2%						
Car Battery			1.8%	1.8%	.9%			
Dry cell	.9%	1.8%	73.4%		1.8%			
LPG								
Firewood		91.7%						
Charcoal		15.6%						
Engine		38.5%						9.2%
Gen-set		1.8%	.9%	1.8%	.9%			6.4%
Solar system	17.4%	.9%	7.3%	11.9%	71.6%	.9%		.9%
Manual		31.2%			.9%	34.9%	28.4%	
NA		23.9%	17.4%	85.3%	23.9%	64.2%	58.7%	

Source: Primary Data January 2018

3.2.26. Land ownership and usage

Table 19 below shows that most people in the study districts own between less than 1 – 2 acres of land (37.7%) own less than 1 acres and (30.1% had between 1 -2 acres). There are few people who own between 2 – 10 or more acres. Those who own land between 2 - 5 acres are 12.3% while those with 5 – 10 acres are 11.4%. However, there are marked differences when figures for the two districts are compared. Bulambuli had more people who owned less than 1 acre (45.5%) than Kween (25.7%). More people in Kween had land between 2 – 5 acres (20.2%) and, 10 and more acres (18.3%) than in Bulambuli where those who own 2 – 5 acres were 7.2% and those who had 10 and more acres were 6.6%.

The major land tenure systems in the districts visited is customary (40.2%), free hold (29.7%), kibanja (21.0%) and leasehold (8.3%). Other types of land tenure systems constituted 0.7%. Major differences in land tenure systems between districts were for customary (53.2% in Kween and 31.7%) and kibanja (25.7% in Bulambuli and (13.8%) in Kween.

In both districts a big proportion of land is under crop growing (70.3%). However, more land is used for crop growing (90.8%) in Kween than in Bulambuli (56.9%). In Bulambuli, more land was used for providing residential housing facilities (25.7%) than in Kween where only 6.4% is used for this purpose. Land is least used for livestock farming (3.0% in Bulambuli and 0.9% in Kween), fish farming (0.9% in Kween and none in Bulambuli) and other commercial purposes (1.8% in Bulambuli and 0.9% in Kween).

TABLE 22: LAND OWNERSHIP AND USAGE

	Total	Bulambuli	Kween	
Land owned	Less than one acre	37.7%	45.5%	25.7%
	Between 1 and 2 acres	30.1%	29.3%	31.2%
	Between 2 and 5 acres	12.3%	7.2%	20.2%
	Between 5 and 10 acres	8.7%	11.4%	4.6%
	Ten and more acres	11.2%	6.6%	18.3%
Major land tenure system	Customary	40.2%	31.7%	53.2%
	Free hold tenure	29.7%	33.5%	23.9%
	Leasehold	8.3%	9.0%	7.3%
	Kibanja	21.0%	25.7%	13.8%
	Other (specify)	.7%	.0%	1.8%
	Crop growing	70.3%	56.9%	90.8%
Purpose put to land	Livestock keeping	2.2%	3.0%	.9%
	Fish farming	.4%	.0%	.9%
	Residential purpose	25.7%	38.3%	6.4%
	Other commercial purpose (e.g. built rental buildings, rented out)	1.4%	1.8%	.9%

Sources: Primary Data January 2018

3.2.27. Source of food

As presented in figure 16 below it was found out that there were three sources of food for people in the study districts; grown on this parcel, buy from the market or grown elsewhere. The main source of food for people was the parcel on which they lived (50.4%), followed by buying from the market (34.1%) and growing elsewhere was for only 15.6% of the people. In Bulambuli a considerable number of people (22.2%) grew their food elsewhere, compared to 5.5% in Kween.

3.2.29. Problems experienced in production activities

Various problems were experienced by farmers in the districts visited as indicated in table 20 below, ranging from drought/lack of water, poor technology, poor post-harvest handling, lack of markets, lack of good access to markets, lack of sufficient land, worms and pests, lack of credit and lack of tools like hoes. The major problem experienced by almost all people was drought and/or lack of water (94.9%) followed by poor technology (25.7%) and poor post-harvest handling (19.6%). However, some problems are more severe in specific districts. Lack of markets, poor harvest handling and lack of sufficient land are more experienced in Kween than in Bulambuli. The problem of worms and pests was graver in Bulambuli (18.6%) than in Kween (2.8%).

TABLE 23: PROBLEMS EXPERIENCED IN PRODUCTION ACTIVITIES

	Total(276)	Bulambuli(167)	Kween(109)
Drought/water	94.9%	98.8%	89.0%
Poor technology	25.7%	24.6%	27.5%
Poor post-harvest handling	19.6%	15.6%	25.7%
Lack of markets	16.3%	7.8%	29.4%
Lack of good access to markets.	13.8%	6.6%	24.8%
Lack of sufficient land	12.7%	8.4%	19.3%
Worms and Pests	12.3%	18.6%	2.8%
Lack of credit	9.1%	6.6%	12.8%
Lack of tools, like hoes	6.5%	6.0%	7.3%
Other (specify)	1.4%	.6%	2.8%

3.2.30. Animals kept

The majority of the people kept birds poultry (85.5%) followed by goats (62.9%) and cows (45.2%). There were few people who kept piggery and ducks in Bulambuli, and none was found in Kween. See figure 18 below.

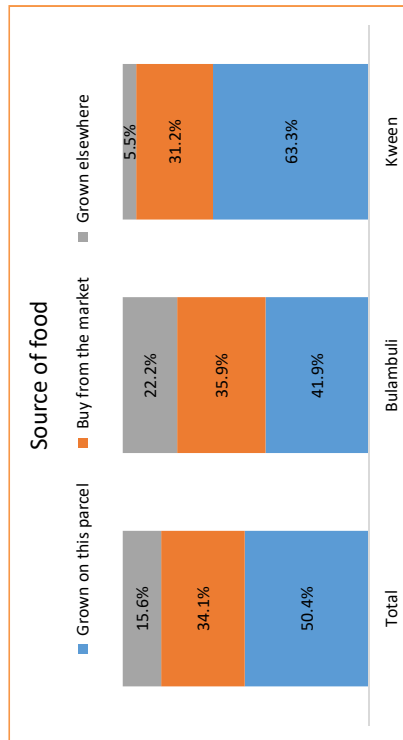


FIGURE 15: SOURCES OF FOOD FOR HOUSEHOLDS

3.2.28. Where produce is usually sold

Figure 17 below present's information on where farm produce is sold. In both districts most people sold produce in the local market (72.8%). There are more people in Bulambuli (29.3%) who did not sell produce at all than in Kween where these were 7.3%. Very few people sold produce far away markets including outside their districts.

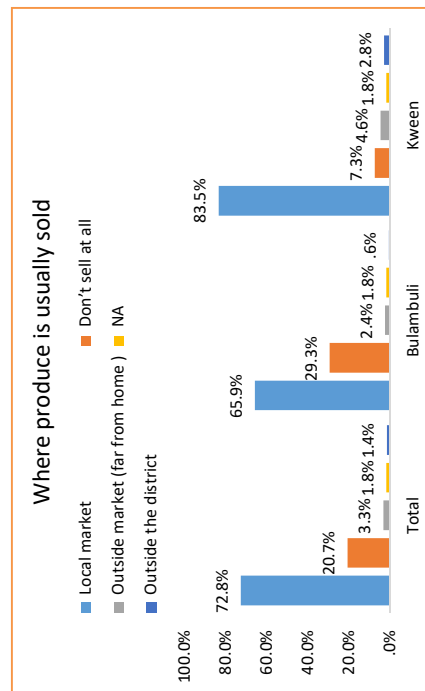


FIGURE 16: MARKET FOR FOOD ITEMS

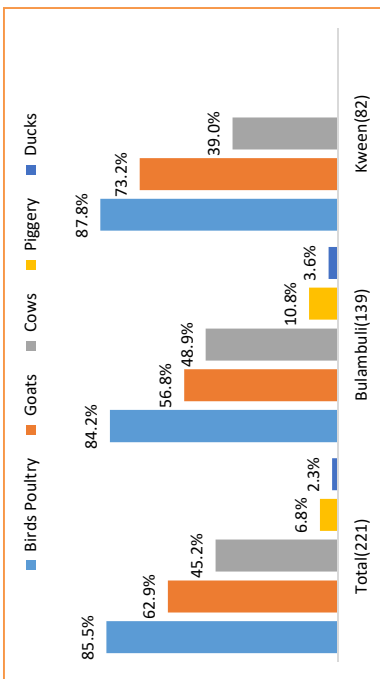


FIGURE 17: ANIMALS KEPT IN THE PROJECT AREA

3.2.31. Where live stock is grazed

It was found out that livestock is grazed on different types of land; private owned land, public land, customary land, private borrowed land and hired land. The majority of people grazed animals on private own land (37.6%). Those who grazed on public land (28.1%) and customary land (27.15) were nearly equal in proportion. The least used mode was hired land (1.4% in Bulambuli and 1.2% in Kween).

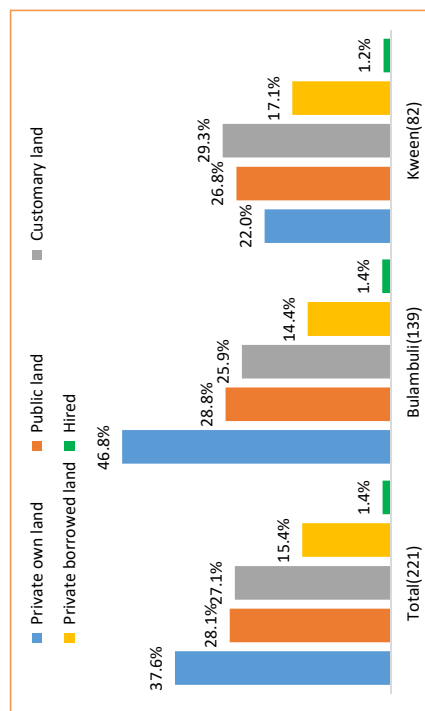


FIGURE 18: WHERE LIVESTOCK IS GRAZED

3.2.32. Problems experienced in livestock rearing

The problems people experienced in livestock rearing are indicated in figure 20 below as; animal disease, inadequate/lack of pasture land, expensive drugs, inadequate/lack of water, cattle theft and no help from government. Animal disease was the greatest problem experienced in livestock rearing (71.9%). Inadequate/lack of pasture (36.2%) and expensive drugs (36.2%) were also big problems. Inadequate water/lack of water was experienced by 33% and therefore a critical issue in livestock rearing in the project districts. There were no major variations between the two districts in the problems experienced, with exception of the complaint of no help from government (4.3% in Bulambuli and 20.7% in Kween) and inadequate/lack of pasture (42.4% in Bulambuli and 25.6% in Kween).

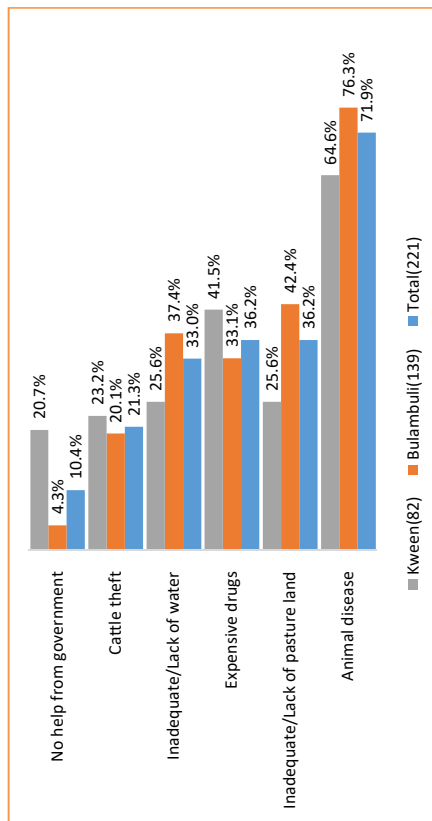


FIGURE 19: PROBLEMS EXPERIENCED IN LIVESTOCK KEEPING

3.2.33. Asset ownership and other equipment

Table 21 below presents information on assets and other equipment owned by the households in the districts visited. Most of the households visited had a house (87.3%) while 20.7% had another building. The mobile phone was another asset owned by most people (77.5%), followed by radio (62.0%), bicycle (30.4%), TV (10.9%), boda boda (5.4%) and other transport equipment (3.3%). The most commonly owned asset under the category of livestock/poultry was chicken (65.9%) followed by goats (44.6%) and cows (36.2%). Other assets included ducks (12.7%), bulls (9.4%), pigs (6.2%), oxen (5.8%), turkeys (1.8%) and

donkeys (1.4%). Another category of assets owned considered in the study constituted land, agricultural tools and equipment. Land was owned by the majority of the people in both districts (95.8% in Bulambuli and 80.7% in Kween). Among the agricultural tools and equipment, the hoe (94.2%) and panga (92.0%) were the mostly owned tools. The least owned assets were ploughs (13.0%), wheel barrows (9.1%) and transport equipment for enterprise (0.4%).

TABLE 24: ASSETS AND OTHER EQUIPMENT OWNED BY HOUSEHOLDS

	Total	Bulambuli	Kween
House	87.3%	94.6%	76.1%
Other Building	20.7%	18.0%	24.8%
TV	10.9%	12.6%	8.3%
Radio	62.0%	58.7%	67.0%
Bicycle	30.4%	34.1%	24.8%
Mobile phone	77.5%	74.3%	82.6%
Boda boda/motorcycle	5.4%	6.0%	4.6%
Other transport equipment (specify)	3.3%	3.6%	2.8%
Cows	36.2%	40.7%	29.4%
Bulls	9.4%	10.8%	7.3%
Oxen	5.8%	3.0%	10.1%
Pigs	6.2%	7.8%	3.7%
Goats	44.6%	43.7%	45.9%
Donkeys	1.4%	.0%	3.7%
Chicken	65.9%	68.9%	61.5%
Turkeys	1.8%	3.0%	.0%
Ducks	12.7%	15.0%	9.2%
Other Livestock/Poultry (specify)	20.3%	17.4%	24.8%
Land	89.9%	95.8%	80.7%
Hoes	94.2%	96.4%	90.8%
Ploughs	13.0%	12.6%	13.8%
Pangas	92.0%	94.0%	89.0%
Wheel barrows	9.1%	9.0%	9.2%
Other agricultural equipment (specify)	8.3%	11.4%	3.7%
Transport equipment for enterprise (specify)	.4%	.6%	.0%

3.2.34. Main items spent on in the household

Asked on what items they spend their money most, results from the survey show that households mainly spend money on food items (48.4%), education (24.2%), health (214.3%) and household items (10.3%). Airtime was one of the items ranked last. See table 22 below.

TABLE 25: MAIN ITEMS SPENT ON IN THE HOUSEHOLD

	Total	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
Food item	48.4%	18.7%	7.4%	7.4%	7.3%	7.3%
Household items	10.3%	24.2%	13.9%	18.8%	17.9%	17.9%
Educational items	24.2%	19.8%	16.5%	13.7%	6.5%	6.5%
Clothing	4%	11.0%	26.4%	20.3%	8.4%	15.3%
Medical items	14.3%	21.6%	20.3%	20.3%	8.4%	15.3%
Transport	.4%	1.1%	1.8%	7.4%	9.9%	9.9%
Water	.4%	.4%	.4%	.7%	1.9%	1.9%
Airtime	.7%	2.9%	3.3%	7.0%	26.0%	26.0%
Foot ware	.4%	.4%	.7%	1.1%	6.5%	6.5%

3.2.35. Standard of living comparison within/among households

Households in the project area visited were asked to rank themselves according to; rich, average, poor and very poor. Results as indicated in figure 21 below show that in total, most households feel within the category of the poor (44.6%) followed by those that were average (42.8%). Households that belonged to the very poor (10.1%) and rich (2.5%) were few.

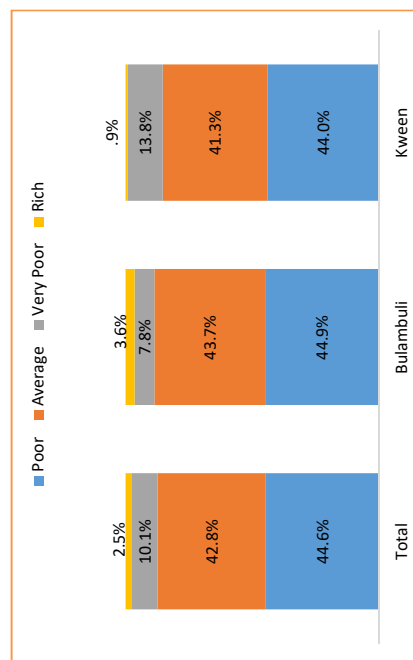


FIGURE 20: COMPARISON OF STANDARDS OF LIVING

3.2.36. Vulnerability

Survey results shows that physical disability was the main form of disability in Bulambuli (70.6%) and Kween (77.8%). Blind people were more (17.6%) in Bulambuli compared to those (11.1%) in Kween but Kween had more people with hearing impairments than those in

Bulambuli (5.9%). People with a mental disability were (11.8%) while there was none in Kween. See figure 22 below.

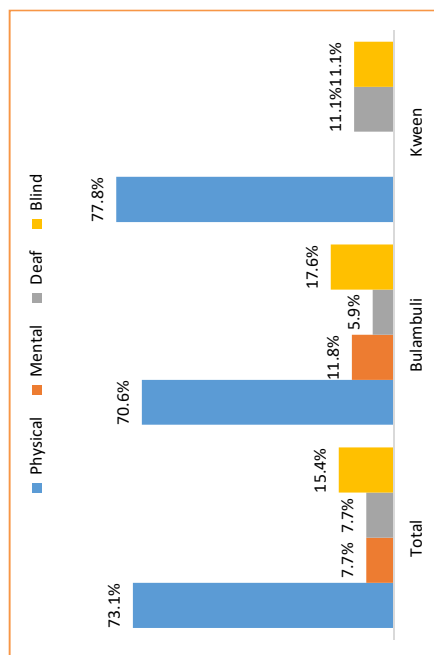


FIGURE 21: VULNERABILITY WITHIN PROJECT AREA

3.2.37. Type of other Vulnerable People

Further analysis on vulnerability of the people in the project area shows that the very old constituted the majority (41.1%) followed by the widowed (27.6%), chronically ill (24.1%), disabled and very poor with an equal proportion (17.2%) and the displaced as the least (13.8%). In Bulambuli, the very old are the majority of the vulnerable people (68.8%) while in Kween, the most vulnerable groups included the very poor (30.8%) and widowed (30.8%). See figure 23 below.

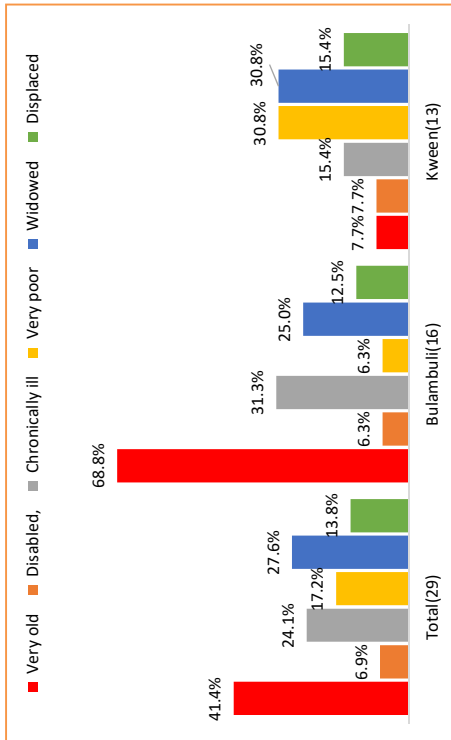


FIGURE 22: TYPES OF VULNERABILITY

3.2.38. Assistance to Vulnerable PAPs

Specific vulnerable groups such as Female headed households; Children headed households; HIV/AIDS infected People/ Disabled; Elderly; Youth and orphans will require assistance based on need and level of vulnerability.

However, results from the census survey show that the prominent form of vulnerability among the PAPs is old age and female household heads. In Uganda, people are considered old after attaining the age of 65 years. Among the heads of PAHs interviewed there are 27 heads of PAHs (6%) aged 65 years and above. Additionally, 79 heads of PAHs (17%) are female. In addition, the two households that may need to be relocated can be considered vulnerable because they are very poor. It means, 108 households are categorized as vulnerable group in the Project.

It is, therefore, recommended that during RAP implementation, the 108 PAHs be given extra assistance during the compensation process by:

- Giving them priority to be served first and
- Assistance in opening bank accounts by providing them with transport.
- Priority registration for employment on the Project's works;
- Land preparation where possible; and
- Credit facilities where possible.

Apart from the above assistance, the project should look into some ways of supporting group based on the nature of the vulnerability.

4. MEASURES FOR COMPENSATION AND ASSISTANCE

4.1. Eligibility Criteria

A Project Affected Persons (PAP) is one who, as consequence of the project, sustains losses as a result of impact on 1) land, 2) structure, 3) immovable asset and/ or d) livelihood/incomes. Through the detailed census and assets/ land surveys, those PAPs were identified.

During the construction of the Project, people will emerge who suffer damage to their property caused by construction works such as damage to cultivated fields, trees and infrastructure such as graves, fences, etc. According to WB OP4.12 and JICA Guidelines, a customary land owner who does not have a certificate on the rights to their occupying lands can be treated as same as those who have legal rights.

4.2. Contents of compensation

4.2.1. Principle of Replacement Cost

All compensation for land and non-land assets owned by households/shop owners who meet the cut-off-date will be based on the principle of replacement cost. Replacement cost is the amount calculated before displacement which is needed to replace an affected asset without depreciation and without deduction for taxes and/or costs of transaction as follows:

Productive Land (agricultural, aquaculture, garden and forest) based on actual current market prices that reflect recent land sales in the area, and in the absence of such recent sales, based on recent sales in comparable locations with comparable attributes, fees and taxes or in the absence of such sales, based on productive value;

Residential land based on actual current market prices that reflect recent land sales, and in the absence of such recent land sales, based on prices of recent sales in comparable locations with comparable attributes; fees and taxes.

Existing local government regulations for compensation calculations for building, crops and trees will be used where ever available.

- Houses and other related structures based on actual current market prices of affected materials;
- Annual crops equivalent to current market value of crops at the time of compensation;

For perennial crops, cash compensation at replacement cost that should be in line with local government regulations, if available, is equivalent to current market value given the type and age at the time of compensation.

For timber trees, cash compensation at replacement cost that should be in line with local government regulations, if available, will be equivalent to current market value for each type, age and relevant productive value at the time of compensation based on the diameter at breast height of each tree.

4.2.2. Disturbance Allowance

Section 77(2) of the revised edition (2000) of the Land Act 1998 provides for a disturbance allowance on top of the computed compensation amount as shown below:

- 30% of compensation amount if quit notice is given within 6 months.
- 15% of compensation amount if quit notice is given more than 6 months.

Therefore all PAPs have been added a disturbance allowance of 15% of the total compensation amount because they will be given a six months' notice to vacate the area before construction starts.

In the project, while resettlement is not required, land acquisition or relocation of structures are required. Based on the meetings with MAAIF and relevant authorities, the basic compensation measures were decided. In addition, as described in chapter 10, Stakeholder Meeting," the contents on the compensation measures were presented to stakeholders at 2nd Stakeholder meetings, and it was basically accepted by the participants. The detailed contents are mentioned below;

4.2.3. Land loss

In the Project, the affected area is defined two (2) categories, such as "agricultural" and "residential land." Whether the PAPs have legal rights or not compensation for affected land will be provided.

Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based. These strategies may include resettlement on public land, or on private land acquired or purchased for resettlement. Whenever replacement land is offered, resettlers are provided with land for which a combination of productive potential, locational advantages, and other factors is at least equivalent to the advantages of the land taken. If land

is not the preferred option of the displaced persons, the provision of land would adversely affect the sustainability of a park or protected area, or sufficient land is not available at a reasonable price, non-land-based options built around opportunities for employment or self-employment should be provided in addition to cash compensation for land and other assets lost. The lack of adequate land should be demonstrated and documented.

Payment of cash compensation for lost assets may be appropriate where (a) livelihoods are land-based but the land taken for the project is a small fraction (e.g. less than 20% of productive area) of the affected asset and the residual is economically viable; (b) active markets for land, housing, and labor exist, displaced persons use such markets, and there is sufficient supply of land and housing; or (c) livelihoods are not land-based. Cash compensation levels should be sufficient to replace the lost land and other assets at full replacement cost in local markets.

In the Atari Irrigation Scheme land that will be lost is the land on which the irrigation infrastructure such as: (Dyke, Main Canal, Primary Canals, Secondary Canals and access roads) will be constructed. This involves strips of land from the already mapped land in the scheme; therefore PAPs are not losing entire land.

4.2.4. Loss of Assets or Access to Assets

Loss of land and/or property if any activity will acquire land as the land in question will be under use of some sort, communally, or individually. This may cause loss of rights to pieces of land, and/or un-exhausted improvements on the land i.e. built structures and crops.

Loss of land: mainly residential land or commercial land. Because rural subsistence agriculture and livestock keeping are widely practiced, therefore, affected land could also be agricultural land or grazing ground. Land could belong to private individuals, local institutions, or community/public land. The land could either be grown with crops, or built with structures or open land used for recreation or not developed/used. Ownership could mainly be under either statutory rights of occupancy or customary rights of occupancy and the affected people will lose these land rights (owner; lease holder; informal user of the land).

Loss of house structures: the built structures could be residential houses (dwelling, residential and commercial houses, house annexed structures (e.g. kitchens, boundary wall / live fences, pit latrines, house foundations, stores, cottage industries, livestock pens/sheds

etc.) or commercial structures (shop, stall); or house supply structures: water source/supply (well, pump, water line), electricity supply (underground, overhead etc.). Loss of buildings and structures will affect (owner; tenant; informal user of the structure) individual, institution or community.

4.2.5. Crop loss

Compensation for perennial crop loss will be paid to the all PAPs, regardless of legal rights on the land cultivated. Compensation for perennial crops shall be determined in accordance with district compensation rates established by respective District land Board.

The field observations revealed that there are seasonal and or annual crops in and around the priority project affected area. These crops include rice, maize, beans, millet and groundnuts. These crops are not permanent; Ugandan laws do not consider such crops to be compensated. Compensation for annual and seasonal crops shall be calculated based on the average yield recorded in the impacted area for the last five years and the current local market prices for different crops grown on the farmers' land. The owners of the crops should be allowed to harvest their produce before the implementation of the project within the time limit granted. The compensation will start and end as per the project plan.

4.2.6. Tree loss

Trees have recognized local market values, depending upon the species and age. Compensation for trees is calculated based on the growth stage of the tree, using the local current price per m . Subistence trees (predominantly mango) are to be compensated on a combined replacement market/subsistence value. Trees are classified into three categories: small (saplings), medium (mature trees), and large (for poles).

For trees that have already started giving yields, compensation is to be calculated considering the annual production of each tree, multiplied by the current local market price and the total number of plants, as well as including the costs for the development of the perennial trees.

If households are resettled, they will be compensated for the commercial/food value of the trees they leave behind. Owners will be allowed to take the plantation of trees within the time limit granted according to the proclamation and those that cannot be moved will be compensated.

4.2.7. Special attention for vulnerable people

Affected households that are particularly vulnerable to Project implementation will be identified through socio-economic surveys of the affected population, and in consultation with the implementing agency. Specific vulnerable groups such as Female headed households; Children headed households; HIV/AIDS infected People/ Disabled; Elderly; Youth and orphans will require assistance based on need and level of vulnerability. However, in addition to other compensation and rehabilitation measures, these households will be supported through the following measures:

- priority registration for employment on the Project's works;
- advice regarding Project impacts,
- compensation alternatives and risks, and
- resettlement options, including advice on alternative subsistence and livelihood strategies as offered by the Project;
- skills/training enhancement;
- land preparation where possible; and
- credit facilities where possible.

Apart from the above assistance, the project should look into some ways of supporting group based on the nature of the vulnerability.

4.2.8. Temporary land loss

4.2.8.1. Damage Caused during construction work

Reconstruction activities may also cause temporary or permanent damage to land and assets that cannot be identified or quantified during RAP preparation. An example might be construction workers trampling crops or vegetables while accessing particular construction sites. Thus, wherever possible, the construction team/contractor will repair the damage to the satisfaction of the affected person. Affected persons with a claim should be required to complete a compensation claim form and submit it to the construction team/contractor. The construction team/contractor will then negotiate the required compensation measures, which may include repairing the damage or payment of compensation in cash or kind. Payment of compensation should be effected within one month of submission of the claim form. It will be the responsibility of the implementing agency that contractor cater for any damage and have

necessary policies to demonstrate this. The cost of damage caused by the contractor will be borne by the contractor not the implementing agency.

4.2.8.2. Residential Buildings, Structures and Fixtures

All affected structures will be valued and compensated in the form of cash equal to cost of building a new structure equivalent to replacement of lost asset. Valuation will be conducted by a registered valuer—either government employee or private contractor. PAPs will have the option of reconstructing their new structures on alternative land either in the vicinity or away from the site as per their individual preferences.

Compensation will be paid for structures such as houses, latrines, fences and any other affected assets. Current market prices or replacement cost, whichever is higher, for construction materials will be determined. The registered valuer will survey the prices for the calculation of compensation from the current local market or replacement cost, whichever is higher, for the construction materials and labour.

4.2.8.3. Loss of Temporary structure

Loss of temporary structure (e.g. temporal commercial structure, latrines, fence, etc.), Will be compensated by cash at government rates and disturbance allowance, equal to inflation for increase in cost of construction materials (equal to replacement cost). Building materials may be salvaged from old housing (transport at their own cost). For those moving to a new settlement, or on-adjacent land, transport assistance to move households or business goods will be provided. Building materials may be salvaged from old housing (transport at their own cost).

4.2.9. Cut-off date

The cut-off-date of eligibility refers to the date prior to which the occupation or use of the project area makes residents/users of the same eligible to be categorized as PAPs and be eligible to Project entitlements. In the Project, Cut-off date was the beginning date of the final confirmation of acquired land and assets survey (on 20th January 2018). This date was disclosed to each affected persons by the consultants who were carrying out property and land surveys plus and also was the commencement of the socio-economic and census survey. The establishment of the eligibility cut-off date was intended to prevent the influx of ineligible non-residents who might take advantage of Project entitlements.

Property inventories with other relevant socio-economic surveys, and fixing a cut-off-date after proper consultation and an announcement, are instrumental to avoid unnecessary and sometimes fraudulent claims for compensation. After the property inspection and survey exercise was completed, no further claims will be accepted. Stakeholders were informed that the date when the property census and socio-economic survey commenced was the official cut-off date and this was 20th January 2018, which is the cut-off date for this RAP.

4.2.10. Livelihood Restoration Measures

The nature of displacement is such that at times cash compensation and other short-term mitigation measures may not be effective to ensure that affected persons get back to their original status or better in terms of their earnings and productivity. Therefore, the designing an income and livelihood restoration plan is essential.

4.2.10.1. Background to the Detailed LIRP

Livelihoods restoration encapsulates specific measures necessary to mitigate any harmful or negative impacts the Project may have on people's economic assets or activities.

The specific objectives of the Livelihood Programmes are to:

- Provide Training in agriculture
- Support Resettlement-Affected People, Households, and Communities in overcoming the disruption generated by displacement and promote the establishment of inclusive and sustainable community livelihood systems.
- Improve the quality of life of resettled families by building their capacity in the management, operation, and maintenance of new replacement assets (housing and infrastructure), replacement lands, and cash compensation.
- Meet the compensation commitments – and support the effective management of compensation commitments – as negotiated with physically and Economically Displaced Households, such that they receive compensation and other displacement-related assistance in a manner that enables them to create new income sources.
- Provide technical assistance and support the development of technical and vocational capacity such that displaced households can improve their livelihoods through an increased capacity to engage in production, trade, and employment.
- Help ensure that displaced households can equally access and benefit from other community, district, and regional development programmes and initiatives (i.e. Government programmes, community development activities, etc.).

4.2.10.2. Livelihood Needs Assessment

The assessment of needs on a household basis will be done based on baseline data gathered from the following sources:

- Consultation with government, households and key persons
- Asset Survey (Structure, Farm, and Crops)
- Socio-economic survey
- Field visits with extensive consultations

Follow up surveys and in-depth interviews during field visits will lead questions to be asked regarding alternative land sizes and locations, and related questions regarding skills and other assets. Also, information will be gathered on preferences for programs, training opportunities, and community development initiatives. The data collected will be assessment for each household's requirement regarding livelihood and income restoration programs.

4.3. Entitlement Matrix

Entitlement matrix is a major integrated part of any resettlement plan. It describes compensation for loss of properties and related assistance for each category of PAPs. The entitlement matrix for PAPs is presented in table below.

TABLE 26: ENTITLEMENT MATRIX

Asset Acquired	Type of Impact	Entitled Persons	Compensation Entitlement	Other Entitlement Measures for Vulnerable Groups and Families
Agricultural land	No displacement: When the remaining land after acquisition is economically viable.	Farmer/ Land owner (Customary, Freehold)	Cash compensation for affected land by full replacement cost.	-
	Displacement: When more than 20% of land owned is acquired by the Project, or when less than 20% of land owned remained after acquisition but the land is not economically viable.	Farmer/ Land owner (Customary, Freehold)	Alternative land where feasible, or cash compensation for the entire land owned, according to PAP's choice. Alternative land will be in terms a new parcel of land of equivalent size and productivity which a secure tenure status without encumbrances at an available location which is acceptable by PAPs. Relocation assistance including costs of shifting, and Assistance for re-establishing perennial crops including economic trees up to a maximum of 12 months, while short-term crops mature. Where land for land options are chosen by households, similar tenure will be provided. Relocation assistance in cash or services on a case-by-case basis as is sought.	-
		Tenant/ Leaseholder (Leasehold)	Cash compensation for the average affected land equivalent to the harvest of market value over three years or the compensation rates as established by the District Land Boards in collaboration with the Chief Government Valuer whichever is the higher.	-

³ In the project area, there is no squatter nor informal dwellers.

Asset Acquired	Type of Impact	Entitled Persons	Compensation Entitlement	Other Entitlement Measures for Vulnerable Groups and Families
Displacement: Entire structure affected or partially affected but remaining structure not suitable for continued use	Loss of temporary structure (e.g., agricultural structure, latrines, fence, etc.)	Land owner (Customary, Freehold)	Cash compensation for affected assets (variable improvements to the property by the tenant-e.g., fence, relocation assistance including costs of shifting + Allowance equivalent to four months rental costs. Assistance to help find alternative rental arrangements. Rehabilitation assistance if required.	For those moving to adjacent land, labor to move household of business goods, determined on a case by case basis. Building materials may be salvaged from old housing (transport their own cost). Cash for fixed assets (if any, based on approved district rates). Assistance to find alternative rental property (business or residence). Arrangement formal lease with similar conditions to previous lease, and provide formal tenancy agreement. Construction of replacement structure. For those moving to a new settlement, or non-adjacent land.
			Cash compensation for affected assets (equal to replacement cost). Disturbance allowance, and Top up equal to inflation for increase in cost of construction materials (equal to replacement cost). Assistance in the procurement of settlement, or non-adjacent land.	Construction of replacement structure. For those moving to adjacent settlement, or non-adjacent land, labor to move household of business goods, determined on a case by case basis. Building materials may be salvaged from old housing (transport their own cost). Cash for fixed assets (if any, based on approved district rates). Assistance to find alternative rental property (business or residence). Arrangement formal lease with similar conditions to previous lease, and provide formal tenancy agreement. Construction of replacement structure. For those moving to a new settlement, or non-adjacent land, labor to move household of business goods, determined on a case by case basis. Building materials may be salvaged from old housing (transport their own cost).
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Asset Acquired	Type of Impact	Entitled Persons	Compensation Entitlement	Other Entitlement Measures for Vulnerable Groups and Families
Residential land	No displacement: Land used for residence partially affected, limited loss and remaining land remains viable for present use. Displacement: Premise used residence severely affected remaining area not sufficient for continued use or becomes smaller than minimally acceptable under the Town and Country Planning Act.	Land owner (Customary, Freehold)	Cash compensation for affected assets (equal to replacement cost). Disturbance allowance, and Top up equal to inflation for increase in cost of construction materials (equal to replacement cost). Assistance in the procurement of settlement, or non-adjacent land.	For those moving to adjacent settlement, or non-adjacent land, labor to move household of business goods, determined on a case by case basis. Building materials may be salvaged from old housing (transport their own cost). Cash for fixed assets (if any, based on approved district rates). Assistance to find alternative rental property (business or residence). Arrangement formal lease with similar conditions to previous lease, and provide formal tenancy agreement. Construction of replacement structure. For those moving to a new settlement, or non-adjacent land, labor to move household of business goods, determined on a case by case basis. Building materials may be salvaged from old housing (transport their own cost).
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5. GRIEVANCE REDRESS MECHANISM

5.1. Grievance Redress Mechanism

A simple Grievance Redress Mechanism (GRM) has been proposed to enable timely settlement of grievances to the PAPs. The grievance procedures will be secured and administered at the local level to facilitate access, flexibility and openness to all PAPs. The grievance redress procedure ensures consultations and involvement of the respective District and Village officials and other key stakeholders and provides for record keeping determining the validity of claims, and to ensure that solutions are taken in the most transparent and cost effective ways for all PAPs. At the time of the detailed socioeconomic survey, the PAPs were informed of the different grievance mechanisms put in place to enable them to direct their complaints and dissatisfactions.

The project will use local mechanisms, which include resettlement committees formed at every village and local leaders of the affected people. These will ensure equity across cases, eliminate nuisance/un-genuine claims and satisfy legitimate claimants. They will also ensure that there is transparency, access and flexibility of the procedure for the PAPs. The grievance resolution mechanism will involve four stages as described below.

5.1.1. STAGE I: Village Grievance Resolution Committee (V/GRC)

There will be a Village Grievance Resolution Committee which comprises of the following members.

- i. Village Local Council Chairperson
- ii. PISD Area Coordination Committee Chairperson (PACC)
- iii. Representatives of PAPs democratically elected by PAPs (Males PACC)
- iv. Representatives of PAPs democratically elected by PAPs (females PACC)
- v. Village/Community Elder

The Committee will explore all possibilities to solve the raised grievance at the village level and refer to higher level if the grievance is not solved by the committee. This committee will deal with boundary disputes, identification of rightful owners and disputes among family members. However, if aggrieved PAP fails to agree with the committee, the PAP can utilize stage II to solve the grievance. The grievance resolution committee members shall undergo a briefing session about their roles and requirements at early stage before commencement of RAP implementation activities.

5.1.2. STAGE II: District Grievance Resolution Committee (DGRC)

The District Grievance Resolution Committee will comprise of the following members.

- i. District Council Representative
- ii. District Land Officer
- iii. PISD District Coordination Chairperson (PDCC)

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Other Entitlement Measures for Vulnerable Groups and Families	transport and labor assistance to move households or business goods. Building materials may be salvaged from old housing (transport at their own cost).	-	Cash compensation for perennial crops at district rates (full replacement cost. Transitional allowance of 5% of value of crops per household which loses perennial crops to cover for income loss.	-	Loss of perennial crops affected by PAPs (where land owner, tenant or squatter)	Land owner	Tree lost	Economic trees	Annual (seasonal) crops	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Land owner	Cash compensation based on type, age, and productive value of affected trees. 10% premium of amount of cash compensation.	-	Temporary Acquisition
Entitled Persons	Building materials may be salvaged from old housing (transport at their own cost). For those moving to a new settlement, or non-adjacent land, transport assistance to move households or business goods.	-	Cash compensation for perennial crops to cover for income loss.	-	PAPs (where land owner, tenant or squatter)	Land owner	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Annual (seasonal) crops	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Land owner	Cash compensation based on type, age, and productive value of affected trees. 10% premium of amount of cash compensation.	-	Annual (seasonal) crops
Type of Impact		-	Cash compensation for perennial crops to cover for income loss.	-	PAPs (whether land owner, tenant or squatter)	Land owner	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Annual (seasonal) crops	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Land owner	Cash compensation based on type, age, and productive value of affected trees. 10% premium of amount of cash compensation.	-	Annual (seasonal) crops
Asset Acquired		-	Cash compensation for perennial crops to cover for income loss.	-	PAPs (whether land owner, tenant or squatter)	Land owner	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Annual (seasonal) crops	Loss of perennial crops affected by PAPs (whether land owner, tenant or squatter)	Land owner	Cash compensation based on type, age, and productive value of affected trees. 10% premium of amount of cash compensation.	-	Annual (seasonal) crops

- iv. PDCC Committee Members (Male and Female)
- v. PAP Representatives PACC Members (male and female)

The PAP representatives depending on the number of PAPs identified about three (3) to seven (7) (PACC members female and male) were democratically elected by the PAPs with the help of the local leaders during to coordinate all issues in regard to the project. The committee will work together with the VGRC to resolve grievances raised by the PAPs including revisiting the site investigation. The Committee will explore all possibility to solve the raised grievance failed to be solved by the VGRC. However, if the DGRC and PAP fail to agree, the PAP can utilize stage III and IV as a last resort to solve the grievance. The grievance resolution committee members shall undergo a briefing session about their roles and requirements at early stage before commencement of RAP implementation activities.

5.1.3. STAGE III: Land Tribunals

All disputes related to land will be resolved with the help of the existing land tribunals. If the Resettlement Committee fails to solve the grievance, it will be referred to the land tribunals. At each level, the land tribunal will endeavour to solve the dispute. If it fails then the dispute will be referred to the land tribunal at the next level.

- (a) The Village Land Council;
- (b) The Parish Land Tribunal;
- (c) The District Land Tribunal

5.1.4. STAGE IV: Courts of Law

Ugandan legislation allows a right of access to the courts of law by any person who has an interest or right over property. If the grievance procedure fails to provide a settlement, complainants can still seek legal redress in courts of law as a last resort.

5.2. Actors Involved and Organisational Structure

Several actors will be involved in the resolution of grievances arising from Project Affected Persons (PAPs). These include:

- MAAIF Project Implementing Unit (PIU) and Resettlement and Compensation Management Unit (RCMU)
- Grievance Resolution Committees
- Local Government Officials
- Land Tribunals
- Project Affected Persons

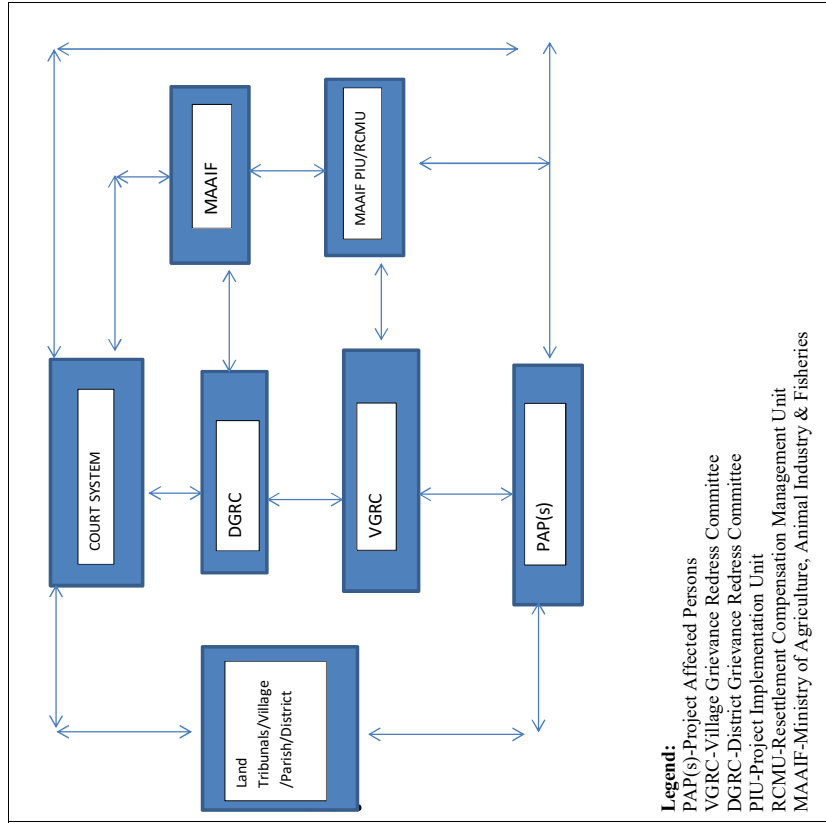


FIGURE 23: ORGANIZATIONAL STRUCTURE OF GRIEVANCE RESOLUTION

5.3. Procedures and Responsibilities

During the socio economic study, the PAPs were informed of the different grievance resolution mechanisms in place for them to pass their complaints and dissatisfactions. The grievances will be channelled through the Grievance Resolution Committees either verbally or in writing but writing will be more preferred. The PAPs could write a letter to the project explaining the nature of the complaint. Since the village leaders are the nearest contacts to the affected persons, they will, in most cases receive the grievances from the PAPs. However, PAPs will be free to submit their grievances to any member of the grievance committee. The members of the committee will

pass on the grievance to the RCMU for proper recording and registration. The RCMU team will include a RAP Specialist /a Sociologist, a Land Surveyor, a Valuer and a Legal Officer. These will work together with the grievance resolution committee to solve grievances raised by affected PAPs or community

After registration of the complaint, an investigation will be carried out by the committee members to verify its validity; thereafter a resolution approach will be selected based on the findings. The decisions /actions taken will be communicated to all parties involved mainly in written form. All avenues will be explored to resolve grievances amicably between the aggrieved parties and the court channels will be the last resort.

Efficiency in solving of the grievances will be of paramount importance. The time to finalise a grievance will depend on the nature of the grievance raised. A grievance database showing the date the grievance was registered, the approach applied to resolve it and the status of the grievance shall be maintained by the project team for easy monitoring of the grievance

5.4. Respect and Confidentiality Policy

Recording a complaint can be a difficult or impossible process if a person is afraid of being punished for his or her act, by members of the RCMU, PIU, VGRC, DGRC, or other interested parties. In addition, many PAPs may not wish to publicize the fact that they have filed a complaint. To address these concerns, the RCMU will have a policy of respect and confidentiality clearly publicized to all parties that will be integrated in the PIU staff and Committees training program. This policy will stipulate that; any person filing a grievance will be treated with respect by the staff of the RCMU, PIU and the Committees; the information relating to the complaint and the complainant is confidential and will not be disseminated in the community; no retaliation by anyone towards the complainant is acceptable in the eyes of the PIU and MAAIF.

5.5. Roles and Responsibilities of the Different Actors in Grievance Resolution

5.5.1. Ministry of Agriculture, Animal Industry & Fisheries (MAAIF)

The responsibilities of MAAIF shall be:

- Overall monitoring of the grievance resolution process.
- Continuously provide advice to the team especially on challenging disputes.
- Participate in grievance resolution of raised complaints from the project affected persons and other stakeholders.
- Budget, allocate and disburse funds for grievance resolution including facilitation of the grievance resolution committee members.
- Provide regular updates to project stakeholders regarding grievance resolution.

5.5.2. Implementing Unit (PIU) and Resettlement and Compensation Management Unit (RCMU)

This will be part of MAAIF dedicated for the project implementation with sub unit selected to deal with resettlement and compensation management. The responsibilities will include:

- Advise on resolving PAPs and project affected communities grievances in various committees
- Will hire the external monitors where necessary to oversee the grievances resolution process.
- Provide routine progress report of the various activities to MAAIF and other stakeholders as required. Prepare a short brochure on the steps in resolving conflicts/disputes
- Prepare a short brochure on the steps in resolving conflicts/disputes to be distributed in the project area.

5.5.3. Village Grievance Resolution Committees

Participate in resolution of grievances related to land acquisition, compensation and resettlement activities at the respective level.

- Receiving complaints from parties in respect of land;
- Convening meetings for hearing of disputes from parties;
- Mediating between and assist parties to arrive at a mutually acceptable settlement of the disputes on any matter concerning land within its area of jurisdiction (Act as a mediator between project and PAPs);
- Monitoring of land acquisition, compensation and resettlement activities;
- Mobilization and sensitization of projected affected persons with grievances;
- Submit PAPs complaints to the Grievance Resolution Committees, to the project team and refer unsolved issues to higher resolution committee or body; and
- Participation during the verification of PAPs, investigations and disclosure of entitlements.

The village resettlement and compensation committee can be the first level to report a grievance, particularly as there is a degree of familiarity in people with such forums. These avenues can be utilized to formally or informally address grievance resolution for:

- wrongly recorded personal or community details;
- wrongly recorded assets including land details and/or affected acreage;
- Change of recipient due to recent death or disability
- Recent change of asset ownership
- Wrong computation of compensation
- Names missed out of register
- Disputes among relatives and neighbours over the land boundaries and ownership.

PAPs will be informed and advised to lodge their complaints, if any to this committee before forwarding them to higher level. Illiterate PAPs shall be assisted to lodge their complaints in writing. The village committees will assess the grievance and state the course of action within

thirty days to the complainant PAP. The redressing the grievance could require measurement equipment; survey personnel; time to check other records or other adjacent plot owner; availability of committee members as they could be busy with other works or addressing other complaints, and thereby take time. Hence, a period of 30 days shall be adequate for appropriate redress. If the complainant PAP is not satisfied with the settlement proposed, the case should be taken to the next stage.

5.5.4. District Grievance Resolution Committees

At district level, a District Grievances Resolution Committee (DGRC) shall be constituted with representation from PAPs, affected communities (local leaders), District Council Representative, District Land Officer, PSD District Coordination Chairperson (PDCC), PDCC Committee Members (Male and Female), PAP Representatives PACC Members (male and female) MAAIF shall be responsible to set such a committee at each of the affected districts. Grievances shall be heard and redressed appropriately within a period of 60 days. At this stage, the follow up activities on grievance mechanisms are as follows:

- Receive referrals from lower committees;
- Convening meetings for hearing of disputes from parties referred from lower committees;
- Mediating between and assist parties to arrive at a mutually acceptable settlement of the disputes on any matter concerning land within its area of jurisdiction (Act as a mediator between project and PAPs);
- Monitoring of land acquisition, compensation and resettlement activities;
- Sensitization of projected affected persons with grievances;
- Proactively disclose information about the RAP process, as well as success in grievance resolution;
- Ensure constant consultation with project affected persons on ways to improve on the mechanisms and processes therein

At this stage, PAPs who were not satisfied with the outcomes from these two stages shall be oriented by the office regarding the procedures applicable under appropriate courts of law particularly land tribunals starting at village level.

5.5.5. Land Tribunals (village land Council, ward and district land and housing)

These tribunals have three levels namely village land council, Parish tribunals and district land and housing tribunals. The dispute can be head at village council level and if the village land council fails to resolve the PAP can appeal to higher level. The responsibilities of these tribunals include:

- Resolve grievances arising due to the activities of the project through land tribunals.
- Mediate between project team and project affected persons.
- Review the grievance resolution process to ensure fairness is served.

5.5.6. Court of Law

Details of jurisdiction of High Court followed by Court of Appeal of Uganda are presented below:

High Court (Land Division) has jurisdiction on matters including

- (a) in proceedings for the recovery of possession of immovable property in which the value of the property exceeds fifty million shillings;
 - (b) in other proceedings where the subject matter capable of being estimated at a money value in which the value of the subject matter exceeds forty million shillings;
 - (c) Land Acquisition Act (Cap 118) in respect of proceedings involving the Government.
- Appeals of matters originating from the Parish Tribunal

Further, persons aggrieved with the decision of District Land Tribunal in the exercise of its appellate or provisional jurisdiction, may within sixty days after the decision date appeal to the High Court (Land Division).

- Every appeal to the High Court (Land Division) shall be by way of petition and shall be filed in the District Land Tribunal from the decision, or order of which the appeal is brought;
- Upon receipt of a petition under this section, the District Land Tribunal shall within fourteen days dispatch the petition together with the record of the proceedings in the Parish Tribunal and the District Land Tribunal to the High Court (Land Division).

Any person, who is aggrieved by the decision of the High Court (Land Division) in the exercise of its original, provisional or appellate jurisdiction, may with the leave from the High Court (Land Division) appeal to the Court of Appeal of Uganda in accordance with the Appellate Jurisdiction Act.

5.6. Capacity building

Training for all relevant staff and relevant stakeholders will be held before the compensation or otherwise as agreed. The training will include all aspects of the grievance resolution mechanism (GRM) including the GRM principles, procedures and its application, with emphasis on transparency and accountability to the complainant(s) and other stakeholders. Effort will be made to establish logging in of all complaints/feedback into GRM system to keep records of all grievances received.

5.7. Grievance recording and logging procedures by the PIU/RCMU

Once the complaint has been received it will be recorded into GRM system. The RCMU will log the details regarding the complaint into the GRM tracking system. This system may be manual (hard copy) or connected to the project Management Information System (MIS) using special designed form.

Once a complaint has been logged, RCMU refers the case to MAAIF Management. The latter shall determine the following:

- Will formulate the team responsible for the complaint investigation.
- The timeframe within which the complaint should be resolved.
- The agreed course of action (e.g. investigation is required, reply not requiring investigation, refer to higher authority for further decision, etc.).

The investigation process is determined based on the nature and gravity of the complaint:

- For village level complaints, the VGRC will investigate the complaints
- For resettlement-related complaints social safeguard officer, surveyor, RAP expert will be involved in the conduct of the verification and investigation process.
- For complaints that are referred to the DGRC, will determine the appropriate mode of investigation.

When the investigation is required conflict of interest will be ensured i.e. all persons involved in the investigation process should not have any material, personal, or professional interest in the outcome and no personal or professional connection with complainants or witnesses.

Once the verification and investigation process has been established and resolution reached, feedback shall be given through to the Grievance feedback/response notification form.

In order to operate the GRM, there will be a designated person at MAAIF who will manage the GRM.

5.8. Investigation

The person(s) responsible for investigating the complaint will gather facts in order to generate a clear picture of the circumstances surrounding the grievance. Verification will include site visits, review of documents, meetings with the complainant (if known and willing to engage), and meetings with those who could resolve the issue (including formal and informal village leaders, or other leaders).

With regards to resettlement and grievances related to valuation of assets at the expenses of the project, a second valuation may be undertaken by another independent valuer involving VGRC Team, representative from District Executive Director and District Commissioner's Office at the expenses of the project, until valuation is accepted by both parties.

The results of the investigation and the proposed response to the complainant will be presented to respective Committee or MAAIF PIU/RCMU for decision.

In the event the agreed actions cannot be carried out and/or if the complaint cannot be satisfactorily resolved in 120 days, complainant can appeal to higher level or resolve to go to court system.

5.9. Notification to the complainant

Following the logging of the complaint, depending on the complexity of the complaint, the PAP(s) will be notified the timeframe and course of action to her/him by phone, email or mail, within thirty (30) days of receipt of the grievance at the respective Grievance Resolution Levels. Feedback will be provided in writing from the respective Grievance Resolution Levels.

6. IMPLEMENTATION FRAMEWORK

6.1. Ministry of Agriculture, Animal Industry and Fisheries

In respect to this RAP, MAAIF will be responsible for resources mobilization, distribution and implementation of compensation and resettlement. Specifically, the Project Implementation Unit (PIU) in MAAIF will be involved with implementation of this RAP. MAAIF has the responsibility to directly oversee resettlement/compensation activities, identifying and coordinating all players in the resettlement programme, managing grievances and monitoring RAP implementation.

Relation to the project: With respect to irrigation aspects in Atari, project issues of on-farm works will be the responsibility of the Ministry especially provision of technical assistance in the design and construction of on-farm irrigation systems. MAAIF will further be responsible for the provision of extension services and advice to farmers on irrigation systems and promotion of efficient water use. In addition, the Ministry will provide support in the supervision and monitoring of water use and management.

Project Implementing Unit (PIU) and Resettlement and Compensation Management Unit (RCMU): Will be part of MAAIF dedicated for the project implementation with sub unit selected to deal with resettlement and compensation management. The responsibilities will include:

- Advise on resolving PAPs and project affected communities grievances in various committees
- Will hire the external monitors where necessary to oversee the grievances resolution process.
- Provide routine progress report of the various activities to MAAIF/JICA and other stakeholders as required.
- Prepare a short brochure on the steps in resolving conflicts/disputes

6.2. Ministry of Lands, Housing and Urban Development (MLHUD)

The Chief Government Valuer (CGV) in the Valuation Division in the Ministry of Lands, Housing and Urban Development (MLHUD) is responsible for approving the property valuation report developed as part of this RAP. Additionally, property or cadastral survey report is submitted to the Commissioner for Surveys & Mapping in MLHUD for review and approval.

Relation to the project: MLHUD will therefore play a direct role in compensation and resettlement activities of proposed project.

6.3. Ministry of Gender, Labour & Social Development, MGLSD

This Ministry guides all actors in the social development sector and creates an enabling environment for social transformation, leading to improved standards of living for all, increased equality and social cohesion. These roles make MGLSD a key secondary stakeholder in proposed irrigation scheme with roles of empowering project communities to

harness their potential through cultural growth, skills development and labour productivity for sustainable and gender responsive development. MGLSD has a department of occupational health and safety which is mandated to inspect workplace to ensure safety and gender equity. The Ministry has the following projects which should tie into and compliment objectives of proposed irrigation scheme project.

- Community Rehabilitation Programme for the Disabled (CBR);
- Functional Adult Literacy Programme (FAL);
- Support to AIDS Orphans and Other Vulnerable Children (PCY);
- Elimination of Child Labour.
- Relation to the project:

Above programmes are relevant in so far as some PAPs may be disabled (hence require CBR programmes) or need FAL and PCY. In addition, MGLSD will ensure that no Child Labour is involved in any resettlement activities.

Ministry of Gender, Labour and Social Development (MGLSD), working through Community Development Officers (CDOs) at district and sub-county level will be responsible for spearheading and coordinating gender responsive and community development, in particular, sensitizing community members to form groups that will adequately utilize the water amicably.

6.4. Local Governments in Which the Project Area Is Situated

The proposed Project on irrigation scheme development in Eastern Uganda will traverse district of Kween and Bulambuli. As provided for by the Local Government Act; local governments are mandated to set compensation rates for crops and non-permanent structures through their District Land Boards. Local governments will also be important in managing and monitoring social impact through site visits or resolving complaints from affected communities. Hence they have a central responsibility in this project in regard to monitoring resettlement impacts and ensuring social benefits of the project are equitably accessible to every community. Local officers will also ensure that proper resettlement, compensation and grievance management are undertaken. The lower administrative structures (Local councils LC1 to LC5) are important in community mobilization and ensuring law and order in villages through local defence units, which should be useful for ensuring security during project implementation, including compensation.

Relation to the project: During compensation, LC1s and LC3s in project-affected areas will be helpful for identification or verification of rightful property owners.

6.5. Grievance Resolution Committees District

At district level, a District Grievances Resolution Committee (DGRC) shall be responsible for the follow up activities on grievance mechanisms are as follows:

- Receive referrals from lower committees;
- Convening meetings for hearing of disputes from parties referred from lower committees;
- Mediating between and assist parties to arrive at a mutually acceptable settlement of the

- disputes on any matter concerning land within its area of jurisdiction (Act as a mediator between project and PAPs);
- Monitoring of land acquisition, compensation and resettlement activities;
 - Sensitization of projected affected persons with grievances;
 - Proactively disclose information about the RAP process, as well as success in grievance resolution;
 - Ensure constant consultation with project affected persons on ways to improve on the mechanisms and processes therein

6.6. Uganda Land Commission

The Uganda Land Commission holds and manages land in Uganda vested in or acquired by Government of Uganda and would be involved where such land is affected by the proposed Irrigation project. This applies to where land affected by the buffer zones and Irrigation infrastructures.

Relation to the project: Uganda Land Commission will manage the land covered by the Irrigation infrastructures on behalf of the Government of Uganda.

6.7. Private Sector Entities

RAP implementation will involve private sector consultants hired by the implementing Ministries for verification and actual payment of compensation to PAPs. These entities are not known at this time since they will be hired through competitive bidding as per Uganda's procurement laws.

Relation to the project: Private consultants who are qualified contribute to successful implementation of the RAP

7. IMPLEMENTATION SCHEDULE

The responsibility of ensuring the resettlement plan is implemented as agreed with the project affected persons rests with the MAEIF/PTU. The process starts at the design stage with the public consultations and the committees forming informal groups "Ad Hoc Committees" at locational level to engage with the proposal. The PTU mandate will expire after the project implementation. It will be involved in the monitoring as regards realization of the objectives of the Plan in the post construction period.

Years	Activities	2017	2018	2019	2020
1.1	Siging of Contract between MAEIF & AES	11	12		
1.2	Introduction of Consultant to the Districts				
1.3	Initial District and Stakeholder Sensitizations				
1.4	Socio-economic Survey				
1.5	Preparations to undertake PAP census and asset valuation				
1.6	First Stakeholder Meeting				
1.7	PAP identification and sensitization meetings with PAPs and taking photos of PAPs				
1.8	Preparation of Draft RAP Report				
1.9	Review of RAP by the JICA				
1.9	Preparation of Final RAP with JICA				

Years	2017	2018	2019	2020
Activities	11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7
3.0				
3.1				
3.2				
4.0				
4.1				
4.2				
4.3				

Years	2017	2018	2019	2020
Activities	11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7
1.10				
1.12				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				

8. COSTS AND BUDGET

The estimates for the resettlement action plan (RAP) will cover land acquisition, compensation for crops, trees and restoration of livelihoods. The details are shown on table 24 below but the actual figures for compensation are to await approval by the Chief Government Valuer before the compensation payments take effect.

It is important to note the estimate of the value given is based on calculation of compensation figures referenced to the diminution in the market value of the land. The effects of severance and injurious affection plus any disturbance element has also been included by the additional 15% of the market value of the properties affected.

8.1. VALUATION CERTIFICATE

Valuation Survey Report⁴ indicates that the Total Compensation Award for PAPs to be affected by the proposed irrigation Project is: Ug. (496,758,543) Shillings: Four Hundred Ninety Six Million Seven Hundred Fifty Eight Thousand, Five Hundred Forty Three for compensation only.

However the compensation process involves so many other factors that need to be taken as indicated the table below. This therefore will bring the total compensation cost to: **Uganda Shillings: 1,384,072,209 (One Billion, Three Hundred Eighty Four Million, and Seventy Two Thousand Two Hundred Nine Only**

TABLE 27: RAP BUDGET

Category	Amount	Activities involved
1. Total Valuation of Land	335,174,000	
2. Valuation for crops/plants	89,375,000	
3. Valuation for buildings/Structures	5,974,450	
4. Disturbance allowance 15%	66,235,093	
Sub-Total	496,758,543	By valuer as final as per today
	198,703,417	Sensitization of PAPs
		Verification of PAPs
		Disclosure of amounts
		Training of PAPs on proper use of compensation funds
		Assist PAPs open accounts
		Prepare accountability report
		Done before RAP implementation
		Ensure all PAPs are captured
6. RAP Update 20%	99,351,708	

⁴The Valuation Report containing details of the valuation figures and types of impact is Appended to this report as Volume 2.

Category	Amount	Activities involved
		Include PAPs who were left out/absent during the RAP preparation Display of final RAP report Prepare supplementary report for approval by CGV
6. Grievance Redress Committee 20%	99,351,708	Election of grievance redress committees Train the committee members Sitting allowance and transport of committee members Prepare grievance redress log report
7. Stakeholder Participation 20%	99,351,708	Continuous process to keep PAPs aboard about the project activities Disclosure of information about the project
8. Livelihood and income restoration during construction preparation 20% Excluding livelihood & Income restoration support	99,351,708	Carry out a needs assessment on all PAPs to establish the opportunity cost of being off their land during construction To establish the best and agreeable form of compensation To establish training opportunities and community development initiatives
9. Estimated amount for livelihood & income restoration for only PAPs in the Buffer Zone	92,500,000	Training in agriculture, and other needs will be established after the needs assessment e.g prove improved seeds, agriculture farm equipment
Sub-Total RAP Implementation	688,610,249	
10. Monitoring and Evaluation Internal 15%	74,513,781	To monitor the effectiveness of the compensation process To ensure clearance of the site before commencement of construction Follow-up on land re-arrangement
11. Monitoring and Evaluation External 25%	124,189,636	To make a follow-up on the resettlement activities evaluate whether the goals and objectives of resettlement were achieved
Sub total	198,703,417	
Grand Total	1,384,072,209	

9. MONITORING AND EVALUATION ACTIVITIES

The JICA Guidelines/World Bank OP4.12 policy on resettlement planning provides that the implementer (MAAIF) of the project shall be responsible for Monitoring and Evaluation (M&E) activities provided for by this RAP. Monitoring will provide an advance warning system for MAAIF and an avenue through which the PAPs will make their needs and reactions known. The funding for the M&E activities shall form part of the project cost.

To ensure that the implementation of the land acquisition and resettlement is carried out in accordance with the relevant requirements of the RAP and to guarantee the progress and quality of the resettlement actions, both internal and independent external monitoring and evaluation procedures will be adopted.

The purpose of resettlement monitoring and evaluation will be to verify that:

- Procedures and obligations described in the RAP are implemented;
- Eligible PAPs receive their full compensation prior to the start of construction activities;
- Mitigation measures have helped people in restoring their lives in a sustainable manner;
- Complaints and grievances of the PAPs are adequately addressed and corrective measures implemented;
- If need be, changes in the RAP procedures and obligations are made to improve service delivery to the PAPs.

Accordingly, the primary monitoring and evaluation activities will be the responsibility of the MAAIF as the project sponsor. MAAIF through the Project Implementation Unit (PIU) will undertake the internal monitoring of the implementation of the land acquisition and resettlement so as to ensure that all the responsible units follow the schedule and comply with the guiding principles of the RAP.

9.1. RAP Monitoring Framework

The project will adopt three components for the monitoring framework that include:

- Internal monitoring by the Project Resettlement Office;
 - External monitoring by a contracted consulting firm or NGO; and
 - RAP Completion Audit by a contracted consulting firm or NGO.
- The scope of each of type of monitoring component is briefly described below.

TABLE 28: MONITORING RESPONSIBILITIES

Monitoring	ACTORS	RESPONSIBILITY
Internal Monitoring	Project Implementation Unit (PIU)	Lead the internal monitoring, day to day and periodic activities
	Policy Planning and M&E Directorate of MAAIF	Lead agency and coordinating institution for both internal and external monitoring of the implementation of this RAP. Periodic monitoring of the planned implementation and its impact.
	MAAIF (PIU)	Regular monitoring to ensure that the approved value for

Monitoring	ACTORS	RESPONSIBILITY
External Monitoring	MAAIF (PIU)	Periodic monitoring of the planned implementation and its impact
	PDCC	Periodic monitoring of the planned implementation and its impact
	External Consultant(s) or NGOs	Periodic monitoring, and evaluation of the implementation of the RAP
RAP Audit	External Consultant(s) or NGOs	Final audit of the RAP implementation

9.1.1. Internal Monitoring

The objective of internal monitoring is to monitor the implementation of the entire RAP for the project. The indicators to be monitored shall include:

- Level of understanding of the project impact and mitigation/resettlement options;
- Number and percentage of affected households consulted during the planning stage;
- Degree/level of involvement of local/traditional authorities, women and vulnerable groups;
- Effectiveness of Compensation to the PAPs and the affected units according to the compensation rates described in the RAP;
- Effectiveness relocation procedures to new housing sites;
- Timely rehabilitation of any affected infrastructure;
- Redistribution of cultivated land within the affected administrative villages;
- Effectiveness of resettlement subsidy to develop collective economy.

9.1.2. External Monitoring

In order to ensure the proper implementation of resettlement, a consulting firm will be recruited by the project to conduct an independent external monitoring of the land acquisition, resettlement and rehabilitation activities of the Project.

The consulting firm must be well conversant with RAP preparation and resettlement monitoring for the World Bank/JICA financed Irrigation Projects. The firm will consider the overall implementation from a broader, long term point of view and will follow the resettlement activities to evaluate whether the goals of resettlement are achieved.

The items to be evaluated will include the comparison of the baseline data in the planning phases with the targets and post project situation.

9.1.3. RAP Completion Audit

The purpose of the completion audit is to establish whether MAAIF has implemented all the activities needed to ensure compliance with resettlement commitments defined by the RAP and applicable policies, and whether compensation and resettlement has been deemed complete. A key objective of the RAP is that compensation, resettlement and other mitigation measures

should lead to sustainable restoration or enhancement of the affected persons' quality of life and income levels.

The completion audit will be carried out by the same auditor as the compliance audit. Based on data collected during this review and other data collected during implementation, the auditor will form conclusions on the following main issues:

- Have the objectives of the RAP been achieved in respect to:
- Identification of the affected people and identification of impacts
 - Compensation for all the impacts of all affected people
 - Timely delivery of entitlements
 - The adequacy of compensation in mitigating experienced impacts
 - Have livelihoods been restored?

Verification of the completion of the RAP will provide a final indication that livelihood restoration is sustainable and that no further action is required. The evaluation report will be made public through the meeting with the PIU through the appropriate media

In addition to the above-mentioned indicators, the monitoring actors will also monitor and evaluate the following indicators:

TABLE 29: SUMMARY OF PERFORMANCE/ INTERNAL MONITORING INDICATORS

Performance monitoring indicators (Internal)
<ul style="list-style-type: none"> • Number and place of consultative meetings held with PAPs and local authorities in preparation of, or during RAP implementation • Grievance issues by type and how they were resolved: Total resolved, total justified, Total resolved at various levels including the type of agreement reached. Total referred to legal system/courts of law, including clarification on who initiated (local leaders, PAP or MAAIF) the referral and subject matter • Actual amount paid and timeliness of payment • The number of people and households who have been resettled to date or their livelihood restored • Number of affected people (men and women) employed in the project construction • Number of complaints: <ul style="list-style-type: none"> Total received; total justified; total non-justified, including the subject matter for all complaints; an explanation for non-justified complaints; Total resolved at various levels including the type of agreement reached; Total referred to the legal system/courts of Law, including a clarification on who initiated (local leaders, PAP or MWE) the referral and the subject matter

TABLE 30: SUMMARY OF PERFORMANCE/EVALUATION INDICATORS FOR EXTERNAL MONITORING

Subject	Indicator	Variables
Land	Acquisition of land	<ul style="list-style-type: none"> • Area of cultivation land acquired for the transmission line Area of communal/government/private land acquired for transmission line developments
Buildings/ Structures	Acquisition of buildings	<ul style="list-style-type: none"> • Number, type and size of private buildings acquired • Number, type and size of community buildings acquired • Number, type and size of government buildings acquired
	Acquisition of other structures	<ul style="list-style-type: none"> • Number, type and size of other private structures acquired • Number, type and size of other community structures acquired
Trees and Crops	Acquisition of trees	<ul style="list-style-type: none"> • Number and type of private trees acquired
	Destruction of crops	<ul style="list-style-type: none"> • Crops destroyed by area, type and ownership
Compensation, Re-establishment and Rehabilitation	Compensation and re-establishment of affected owners/individuals	<ul style="list-style-type: none"> • Number of homesteads affected (buildings, land, trees, crops) • Number of owners compensated by type of loss • Amount compensated by type and owner • Number of replacement houses constructed • Water supply access • Number of replacement businesses constructed
	Re-establishment of community resources	<ul style="list-style-type: none"> • Number of community buildings replaced, Number and type of plants lost, Number of seedlings supplied by type • Number of trees planted
Hazards and Disturbances	Introduction of nuisance factors	<ul style="list-style-type: none"> • Number of homesteads affected by hazards and disturbances from construction (noise levels, blasting, increased traffic levels)
	Changes to homestead structure	<ul style="list-style-type: none"> • Homestead size (births, deaths, migration in and out) • Age distribution • Gender distribution • Marital status • Relationship to homestead head • Status of "vulnerable" homesteads
Social/ Demographic	Population migration	<ul style="list-style-type: none"> • Residential status of homestead members • Movement in and out of the homestead (place and residence of homestead members)
	Changes to access	<ul style="list-style-type: none"> • Distance/travel time to nearest school, health centre, church, shop, village
	Changes to health status	<ul style="list-style-type: none"> • Nutritional status of resettled homestead members • Number of people with disease, by type (STDs, diarrhoea, malaria, ARI, immunizable disease) • Mortality rates • Access to health care services (distance to nearest facility, cost of services, quality of services) • Utilization of health care services • Disease prevention strategies • Extent of educational programmes • Latrine provision at schools (school child population per VIP on site)
	Changes to educational status	<ul style="list-style-type: none"> • Literacy and educational attainment of homestead members • School attendance rates (age, gender) • Number, type of educational establishments
	Changes to status of women	<ul style="list-style-type: none"> • Participation in training programmes • Use of credit facilities • Landholding status • Participation in the project-related activities and enterprises

Subject	Indicator	Variables
	Homestead earning capacity	<ul style="list-style-type: none"> Main income source Monthly income level Ownership of capital assets Ownership of equipment and machinery Landholding size, area cultivated and production volume/value, by crop (cash and subsistence crops) Landholding status (tenure) Redistribution of cultivation land Changes to livestock ownership: pre- and post-disturbance Value of livestock sales, and imputed value of barter transactions Consumption of own livestock production Employment status of economically active members Skills of homestead members Earnings/income by source, separating compensation payments Changes to income-earning activities (agriculture) – pre- and post-disturbance Changes to income-earning activities (off-farm) – pre- and post-disturbance Amount and balance of income and expenditure Possession of consumer durables Realization of homestead income restoration plans (components implemented, net income achieved) Possession of bank and savings accounts Access to income-generating natural resource base (wood, grass, sand, stones)
	Changes in social organization	<ul style="list-style-type: none"> Organizational membership of homestead members Leadership positions held by homestead members
	Population influx	<ul style="list-style-type: none"> Growth in number and size of settlements, formal and informal Growth in market areas Influx of people from outside the project area
Consultation	Consultation programme operation	<ul style="list-style-type: none"> Number of local committees established Number and dates of local committee meetings Type of issues raised at local committees meetings
	Information dissemination	<ul style="list-style-type: none"> Involvement of local committees and NGOs in participating in the project's planning and development Number, position, staffing of Information Centres Staffing, equipment, documentation of Information Centres Activities of Information Centres Number of people accessing Information Centres Information requests, issues raised at Information Centres
	Grievances resolved	<ul style="list-style-type: none"> Number of grievances registered, by type Number of grievances resolved Number of cases referred to court
Training	Operation of training programme	<ul style="list-style-type: none"> Number of local committee members trained Number of affected population trained in Project-related training courses
Management	Staffing	Number of implementing agencies by function
	Procedures in operation	<ul style="list-style-type: none"> Number of ministry officials available by function Number of office and field equipment, by type Census and asset verification/quantification procedures in place Effectiveness of compensation delivery system

Subject	Indicator	Variables
		<ul style="list-style-type: none"> Number of land transfers effected Co-ordination between local community structures, NGOs and PIU officials

The tools available to the resettlement unit to carry out performance monitoring include;

- Public Consultation and Informative Meetings to obtain PAP satisfaction rate from the RAP activities
- Simple Random Sampling to obtain the current household socio-economic conditions to be used as monitoring benchmarks
- Key Informant interviews
- Formal and Informal meetings with PAPs and other relevant stakeholders
- Focus Group Meetings with Vulnerable Groups
- Field Observations by experts
- Grievance and Grievance Close out forms
- Project Progress Report

TABLE 31: MONITORING INDICATORS

I		Public Meetings (regardless of official or non-official)			
Monitoring Item:		As per meeting organized			
Monitoring Frequency:					
No.	Date	Venue	No. of Participants		Agenda
			Male	Female	Total
1					
2					
Note: Details contents of all meetings should be kept records.					
II		Seminars relevant to the Project ¹			
Monitoring Item:		As per seminar organized			
Monitoring Frequency:					
No.	Date	Venue	No. of Participants		Agenda
			Male	Female	Total
1					
2					
*1: E.g., Seminars on Pesticides and Fertilizers Use.					
III		Water Users' Association (WUA) Member List			
Monitoring Item:		As per seminar organized			
Monitoring Frequency:					
No.	Village/ Parish/ Sub-county/ District	Tick a box (✓)		Name of Member	
		Male	Female		
1					
2					
IV		Complaints relevant to the Project			
Monitoring Item:		Monthly			
Monitoring Frequency:					

(1) Summary

Item	Type of Complaints	No. of Complaints	No. of Solved Complaints	No. of Un-solved Complaints
VGRC*1				
DGRC*2				
Land Tribunals				
a) Village level				
b) Parish level				
c) District level				
Courts of Law				
Other				
(Specific:)				

*1: Village Grievance Redress Committee

*2: District Grievance Redress Committee

(2) Complaint List

No.	Date	Complainant		Name	Detailed Contents of Complaints	Members Concerned
		Male (✓)	Female			
1						
2						

V Monitoring Item; Progress of RAP Activities

Monitoring Frequency: Monthly

Item	Completion Date Period	Expected Date of Completion (if it has not been done yet.)
RAP Finalization Period		
Submission to CGV*1		
Approval by CGV		
Procurement of RAP Implementation Consultant		
Approval for payment by IMAAIF		
Preparation of Compensation Funds by MAAIF		
Disclosure of Compensation Amounts		
Opening Banks Accounts of for PAPs		
Training Programmes		
Payment of Compensation to all PAPs		
Grievance Resolution and settlement of disputes		
Implementation of Livelihood Restoration Programmes		
Assistance of Vulnerable People		
External Monitoring and Evaluation		
RAP Audit Report		
RAP Completion		

*1: Chief Government Valuer" under the Ministry of Lands, Housing, and Urban Development

VI Monitoring Item; Progress of Compensation Payment, Land acquisition, and Resettlement

Monitoring Frequency: Quarterly

Resettlement activity	Planned Total	Unit	Progress in Quantity		Progress in Percentage		Expected Date of Completion
			During the quarter	Till the last quarter	Up to the quarter	Up to the last quarter	
Progress of compensation payment (all lots)		No. of HHs					
Lot 1		No. of HHs					
Lot 2		No. of HHs					
Lot 3		No. of HHs					

Lot 4	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs	No. of HHs
Progress of Providing Livelihood Support (all lots)																		
Lot 1																		
Lot 2																		
Lot 3																		
Lot 4																		
Progress of land acquisition (all lots)																		
Lot 1																		
Lot 2																		
Lot 3																		
Lot 4																		
Progress of asset replacement (all lots)																		
Lot 1																		
Lot 2																		
Lot 3																		
Lot 4																		
Progress of resettlement of people (all lots)																		
Lot 1																		
Lot 2																		
Lot 3																		
Lot 4																		
Progress of Land Re-organization (all lots: 12 ha)																		
Lot 1																		
Lot 2																		
Lot 3																		
Lot 4																		

VII Monitoring Item; Economic Situation Quarterly (Simple Random Sampling)

No.	Sex of HH Head (✓)	Main Income Source of HH	Amount of Monthly Income (UGX)				Amount of Expenditure (UGX)											
			1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th								
1	Male																	
2	Female																	

TABLE 32: RAP MONITORING PLAN

Item	Action	Frequency
Internal Monitoring	Site visits during resettlement implementation	Monthly
	Follow up with local leaders/ villagers/PAPs	Quarterly
	Reporting to JICA during RAP implementation	On completion (1 time)
External Monitoring	RAP Implementation Completion of Report	Biannually (as necessary)
	Site visits during RAP implementation	Biannually (as necessary)
	- Key informant interviews	Biannually (as necessary)
	- Field observation with Experts	Biannually (as necessary)
	Discussions with PAPs and other stakeholders (regardless of formal or informal)	Annually
RAP Implementation Audit	Focus group meetings with vulnerable groups	Annually
	Simple random sampling to obtain the current household socio-economic conditions to be used as monitoring benchmarks	Annually
	RAP Implementation Annual Reports	Once after implementation completion

VIII	Monitoring Item: Monitoring Frequency	Household Members Quarterly (Simple Random Sampling)								
	Name of HH members	Sex (✓) Male Female	Age	Marital status (✓) Single Married	Relationship to the HH Head	Residential status	Movement in/ out of household members			
IX	Monitoring Item; Monitoring Frequency;	Hazard and Disturbance Monthly (During Construction)								
	Item	Monitoring Results								
	No. of Households Affected by hazards and Disturbance from Construction	HH(s)								
	No. of Patients among construction workers	Person(s)								
	No. of accident relevant to the Project Construction	Accident(s)								
	Children labor during Project Construction	Person(s)								
	Crimes by construction workers including sexual harassment	Crime(s)								
X	Monitoring Item; Monitoring Frequency;	Extent of damage to existing infrastructures Monthly (During Construction)								
	No.	Date	Venue	Details of Contents	Owners of existing infrastructures	Solution				
	1									
	2									
XI	Monitoring Item; Monitoring Frequency;	Case of conflict between construction workers and community members Monthly (During Construction)								
	No.	Date	Venue	Details of Contents	Solution					
	1									
	2									

9.2. Payment of compensation

Sufficient compensation to all the PAPs as per the agreed schedule before the civil construction of the Project begins. Monitor and make detailed record of the type, rate, amount, date and payee of the compensation.

Linkage between the land acquisition, resettlement and the civil works construction of the Project Land acquisition and resettlement will be finished at least 1 month before the initiation of civil construction of the Project.

10. PUBLIC CONSULTATION

10.1. Rationale for Consultation with Displaced Persons

This chapter describes the public consultation and disclosure for the project and stakeholder consultations that took place during the RAP study. The key objective of the public consultation process for the RAP is to ensure the participation of stakeholders in planning and implementing activities associated with involuntary resettlement.

Effective resettlement planning requires regular consultation with a wide range of Project stakeholders. Early consultation helps to manage public expectations concerning impacts of a project and expected benefits. Subsequent consultations provide opportunities for the Project proponent and representatives of affected populations to negotiate compensation packages and eligibility requirements, resettlement assistance, and the timing of resettlement activities.

Consultation with affected persons is the starting point for all activities concerning resettlement. As a matter of strategy, public consultation shall be an on-going activity taking place throughout the entire project cycle. The justifications for consultations are:

- In principal, the socioeconomic situation in Uganda makes public consultation with the communities, indispensable.
- The land in question will be under use of some sort, communally, or individually.
- It is the local communities who will be host communities for the displaced people
- Local communities have a wealth of knowledge of local conditions - an invaluable asset to the Developer.

In recognition of this, particular attention was paid to public consultation with potentially affected individuals/households, the local and district leadership.

10.2. Stakeholder Engagement

A stakeholder engagement plan was drawn to help identify and analyse the relevance of the stakeholders to be consulted. Stakeholders are groups of people connected to one another through formal or informal ties, which have something to gain or lose from a proposed development initiative. Stakeholders in any project will include various social groups, formal and informal agencies in public and private sectors and NGOs/CBOs. NGOs/CBOs are particularly beneficial for the development plans when they work together in coalitions, pooling their resources and lobbying efforts.

10.3. Stakeholder Identification

A broad range of stakeholders have been identified for the Atari Irrigation Project. These include directly affected persons, indirectly affected persons, NGOs and Government Agencies, such as Ministry of Lands, Housing Urban Development, Ministry Gender Labour and Social Development, Ministry Justice and Constitutional Affairs, District Local Governments, NEMA s, and Communities. The identification of stakeholder was based on the project scope and the geopolitical and traditional setting of the project area as described below.

10.4. Directly Affected Persons

The directly affected persons are the people who reside in or derive their livelihood from the project area. The directly affected persons were consulted about relocation, livelihood and income restoration possibilities. The directly affected persons were the core target of the socio-

economic census during RAP studies.

10.5. Indirectly affected Persons

This group included persons who reside near the project area or rely on resources (such as water, pasture land, wetlands etc.) likely to be affected by the project. This group of stakeholders will have to change or adjust their living patterns when the construction of the Irrigation scheme starts.

10.6. Government Agencies

Under the present arrangement of governance, power belongs to the people and therefore, the role of the local communities in decision-making is critical. Most importantly, the Project area Coordination Committees (PACC) and the District Area Coordination Committees (PACC) and Local Government units at Village are in charge of handling land issues. The PACC and the Village system will facilitate easy identification of genuine owners of property likely to be affected.

10.7. Approach and Methodology

Consultations were done mainly through community meetings with community members living within and those near the project area, and also sufficient information was disclosed before and during socio-economic surveys.

Community Meetings

During the RAP exercise, Local Government leaders, such as Districts (Kween & Bulambuli), Village leaders were consulted first as a way of introducing the project and the staff carrying out the RAP exercise like the surveyors, the valuers and the social team. Then before engaging the communities, local leaders were informed and requested to join the teams during the sensitization process and they assisted in taking the minutes of the meetings. Minutes of consultation are presented as annex 1.

Consultations were carried out in the 2 districts where the project located. The main purpose was:

- To have an insight on how resettlement and land acquisition issues are handled in such projects.
- And also get a fair understanding of the social economic baseline indicators of the project areas.
- To establish how grievances have been handled in the past project implementation and also ascertain if there is sufficient capacity to handle Social safeguards at the District level.

So far two stakeholder meetings have been held in December 2017 and 20th January 2018 at the project area.

During the public forums, the public were explained to not only the location of the project area using maps but were also informed of the expected benefits, impacts in terms of land acquisition and the mitigation measures of how they will be compensated for the loss of their land and all other benefits they have been getting from project area including the physical cultural resources. They were also informed of the arrangements to address any grievances that might arise, their opportunity to influence and identify appropriate benefits. They were encouraged to form ad-hoc project committees to internalize the project components and if need be, guide the study teams,

and consult among themselves and articulate their concerns effectively. Emphasis was placed on a fully inclusive, open and transparent stakeholder participation process in the transfer of information about the proposed project. The information was disclosed well in advance before the stakeholder meetings, and meetings were held in a form understandable by local people.

TABLE 33: QUESTIONS, RESPONSES AND HOW THEY WERE INCORPORATED IN THIS RAP

Questions	Responses	How it is Addressed in the RAP
Mr. Magoona Godfrey asked if the PAPs were going to be part of the team to assess how much a person will be paid for during the exercise.	Ms. Aisu informed the meeting that the compensation rates will be got from the districts which the Chief Government Valuer will approve, so there will be no need for the PAPs to be part of the process.	The valuers used rates from the Districts of Bulambuli and Kween for determining the values of crops/trees and temporal structures as stipulated in the laws.
Another question from Mr. Magoona was whether the farmers will be allowed to go to the field during the construction time.	Eng. Lwanga informed the meeting that this will not be possible because the construction site shall be out of bounds due to safety concerns. The Constructor will want to minimize accidents as much as possible. In addition, Eng. Lwanga informed that the period when the farmers cannot enter their field will be shorter, since the entire construction period of the project will be phased by the area.	
Masinde Juma said that the cooperation with the farmers was still good and prayed that it continues. He also thanked the Consultants for taking the complaints of the farmers and for agreeing to come back and solve the still pending problems. He further requested the Consultants to alert them in time so that they can mobilize for the farmers to stay around.	The consultant assured the PACC Chairman for Bulambuli that they will be informed in advance before any activities take place	This has been the practice all through the RAP preparation process. The Chairpersons PACC is always informed through telephone calls.
Masinde raised the issue of the river meandering such that some parts of the river have been left out. This river acts as a boundary between Kween and Bulambuli. In between there is a land owner, where will that land owner be, is it in Kween or Bulambuli?	The project is not going to change any boundary between the two districts. All land will remain the same apart from a little portion that will be taken by the project will be fully compensated by Government of Uganda. This project has not come to divide boundaries; the owner of the affected land will remain the same, so no worries	This will be realized during the construction period

Questions	Responses	How it is Addressed in the RAP
	River meandering – spots are very short and close to each other. River training will be done on two spots, try to redirect the river so that it does not meander a lot. Dykes will form the boundary of the districts, and if we are training in someone's land, that person will be compensated for. Training will be within the buffer zone of 30 meters.	
Kitutu Patrick had reservations that this project was hatched by the people of Bulambuli, and JICA FS Study Team had initially told them the Bulambuli district would own 70% and Kween district would have 30%. But when there reached a time a lot of confusion came up, and now the project Bulambuli has only 45% and Kween has 55%!! This is so unfair to the people of Bulambuli.	Ms. Aisu assured the meeting that this is a government project which should benefit everybody and the people should stop talking in terms of Bulambuli or Kween. First of all the communities have inter-married without any problem. The two districts are accommodating many tribes like the Iteso, Bagwere, Kenyans, Samyas etc, so the problem of the Bulambuli/Kween should not rise.	Section 3.1: 3.3.3 shows the different tribes found in the project area.
Khabakha Sulai raised the issue of farmers not accessing their fields during the construction time and yet a lot of his food will be inside during the Construction. How does he get food to feed his family?	Eng. Lwanga responded that construction will be done in bits, and it will not take a long period when a site is condoned off, it may take say 2-4 days only and that side is open for farmers to pass to go to their fields. The contractor will be very fast because the equipment he will use will be very expensive to hire so more time the contractor spends in a site the more expensive the project becomes.	Continuous sensitization
Ayeba Yasin's concern was that the day the construction starts all the land will be leveled, is it true or not? Then how will the machines work? He suggested that for the smooth running of the project, government should resettle the affected persons for say two years, feeding them with their families until the construction of the Scheme is	Mr Ayeba was referred to the above response and was told that the issue of leveling the land will be explained in the next stakeholder meeting.	Continuous sensitization

Questions	Responses	How it is Addressed in the RAP
<p>Chertwo Joselyn said that JICA Study Team went to her garden and planted pegs, when she asked them what the purpose is. Then, they told her that was a government project which was in a position to shift her to another place. But this is her green bank for her family.</p>	<p><i>It seems there was a miscommunication at that time. However, when her field is needed to be acquired for the project, it will be compensated fully.</i></p>	<p>Valuation Report</p>

Appendix 1: Volume 1: Project Affected Persons Register including Photographs and Serial Numbers

Appendix 2: Volume 2: Valuation Report

Appendix 3: Volume 3: Strip Maps of the Project Affected Area

Annex 1. . MINUTES OF THE FIRST STAKEHOLDERS' MEETING OF ATARI IRRIGATION SCHEMME HELD ON 1ST FEBRUARY 2018

Date: 1st February 2018

Venue: Atari Primary School Play Ground

Time: 15:00pm – 17:00pm

Language: English, Lomasaba and Kiswahili

Participants:

Stakeholder	Number	Remark
Ministry of Agriculture, Animal Industry, and Fisheries	4	
Ministry of Justice and Constitutional Affairs	1	
Ministry of Gender, Labor, and Social Development	1	
PDCC	4	From both sides
PACC	12	From both sides
Community members (Farmers etc.)	135	Including Project Affected Persons, and not affected persons.
Associated Engineering Surveyors Ltd.	5	Including director, surveyor, and sociologists.
JICA Uganda Office	2	
JICA Study Team	3	Team Leader, Social Consideration, and Interpreter

Agenda:

1. Opening Remarks
2. Prayer
3. Introduction
4. Communication from the M/C
5. A word from MAAIF
6. RAP Progress report by AES RAP Consultant
7. Explanation of Project Component with MAP
8. Questions and Answers
9. Closing Remarks

Minute 1/02/2018: Opening Remarks

The meeting was called to order by Mr. Nangai Geoffrey, Chairperson Bulambuli PDCC Bulambuli District who was appointed to chair the meeting. He welcomed all members present and thereafter asked a volunteer to lead in a word of prayer and this was done by one of the farmers.

Minute 2/02/2018: Introduction

Due to the presence of different teams from different organizations, he asked each team leaders introduced their own members. The meeting was well represented by all stakeholders who included; Ministry of Agriculture and Animal Industry and Fisheries (MAAIF), Ministry of Justice and Constitutional Affairs (MJCA), Ministry of Gender, Labor and Social Development (MGLSD), JICA Uganda office, JICA Study Team, Associated Engineering and Surveyors, Local Government Leaders from Kween and Bulambuli Districts, PACC & PDCC members Project Affected Persons (PAPs) and Farmers.

Minute 3/02/2018: Communication from the Master of Ceremonies

Mr. Nangai Geoffrey, Chairperson PDCC Bulambuli District appreciated the shape the project is taking so far and asked all members to embrace the project completely. He added that this kind of stakeholder meetings were very important in keeping all parties abreast with project activities. He thanked MAAIF and JICA for the initiative especially by bringing the meeting down to the project site in Atari. Mr. Nangai then invited a representative from MAAIF to come and address the meeting.

Minute 4/02/2018: A word from MAAIF Project Manager

Eng. Lwanga informed the meeting that the people of Bulambuli and Kween are gifted by nature for having such flat land. He said that what the Ministry is doing in Atari is not being done in any part of the country; the people of Atari are the luckiest people he has ever seen. Eng. Lwanga said that the process of acquiring land for agricultural development is being done within the laws in Uganda that is why the RAP Assessment Committee is compromised by all the above stakeholders.

Eng. Lwanga said that the Top Leadership Committee formed a Joint Coordination Committee comprising of Ministry of Water and Environmental, NEMA, Ministry of Justice and Constitutional Affairs which will handle everything within the law, Gender and Social Development to handle employment issues, Ministry of Lands, Housing and Urban Development to handle land issues.

Eng. Lwanga further informed the meeting that Atari Irrigation Scheme will be constructed by the Japanese Government and to Japanese standards. The whole country is looking at Atari Irrigation Scheme as a model irrigation scheme. So the people of the project area should handle it with a lot of care that it deserves.

Eng. Lwanga stated that people of the two districts will be in business throughout the year in spite of weather patterns because of the irrigation scheme. The scheme will empower farmers to improve their livelihoods and attain food security. Therefore all concerned must work together to ensure that this scheme works well.

The scheme will extend some extra waters to the lower bit of the wetlands. The people of the affected area should plan how to work with other farmers to provide everybody with water as it

exists. Eng. Lwanga then invited the RAP Consultant, Ms. Elizabeth Aisu to brief the meeting about the RAP process so far.

Minute 5/02/2018: Briefing from AES RAP Consultant

Ms. Aisu thanked the people of the two districts of Kween and Bulambuli especially the local leadership, PACC members and farmers for being cooperative and hence making the work of the RAP consultant easy. The PACC in particular has been very fast in mobilizing farmers whenever they are needed. She mentioned that the Scheme will empower the communities to improve their livelihoods and attain food security that is the reason they have collected baseline information about the people living in Atari so as to evaluate the impact of the project on their livelihoods after a given period of time. She therefore compelled everybody to work together to ensure that this scheme works well for the benefit of the community.

Ms Aisu took the meeting through what the Consultants have since done from the time they were introduced to the two districts of Kween and Bulambuli which began by holding meetings with district leadership and the PACC members on 5th December 2017. The Consultants then went back to the Districts on 3rd January 2018 to start RAP studies. Again the consultants started by visiting both district headquarters to announce their presence in the districts. They then carried out a stakeholder sensitization meeting was on 9th January 2018 where leaders of the two districts were fully represented PACC members from the two districts, farmers from the project affected area, Surveyors, Valuers and the Social Team. The purpose of the first stakeholder meeting was to explain the RAP methodology and ask for the stakeholder support during the fieldwork.

There after the sensitization meeting, surveyor and valuer embarked on identifying the farmers who will be affected by the project infrastructure meanwhile the social team mobilized research assistants for the collection of the socio-economic data. From 12th to 13th January, research assistants were recruited from the two districts and trained, on 14th January 2018. Local Council Chairpersons from Sikwo – 3 and Buwembere 4 Parishes were met and they provided lists of all persons that live within these villages.

In the period of 15th January to 19th January social economic studies were carried out. Household interviews were held among the households within the project area and buffer zone plus the neighboring villages. A total of 274 households were interviewed and 20th January the Consultants met the JICA Study Team and briefed them of the progress of the work.

After the surveyors and valuers had identified the Project Affected Persons (PAPs) the social team mobilized them for the RAP Census from 21st to 23rd January 2018. Starting from 24th to 31st January 2018, a census on all PAPs was carried out using household questionnaires, photos of each PAP was taken, names verified and grievances noted and recorded.

Ms. Aisu concluded her presentation by informing the meeting that the Surveyors, Valuers and the Social Team will go back to the affected area and sort out all queries that are being raised by the farmers at a later date. She also requested the Chairmen to receive all complaints and record them down so that when the team comes back to the ground, they know exactly how many PAPs need their attention. Lists of complaint from the PAPs are appended to these minutes.

Minute 6/02/2018: Explanation of Project Component with MIAP

Together with JICA Study Team the consultant showed the members present the map of the project area showing how the land in the project area is demarcated and where the project infrastructure is located thereby determining those farmers who are going to be affected by the project. This process was highly appreciated by the farmers and it clearly brought out the issue of

only those who will be affected by the project infrastructure (PAPs) instead of thinking that all of them were to be affected.

Minute 7/02/2018: Questions and answers

The Chairperson of the meeting informed the meeting that people should only raise questions which are very peculiar because most of the queries are already being handled.

1. **Question 1:** Mr. Magoona Godfrey asked if the PAPs were going to be part of the team to assess how much a person will be paid for during the exercise.

Response: Ms. Aisu informed the meeting that the compensation rates will be got from the districts which the Chief Government Valuer will approve, so there will be no need for the PAPs to be part of the process.

Question 1.1: Another question from Mr. Magoona was whether the farmers will be allowed to go to the field during the construction time.

Response: Eng. Lwanga informed the meeting that this will not be possible because the construction site shall be out of bounds due to safety concerns. The Constructor will want to minimize accidents as much as possible.

In addition, Eng. Lwanga informed that the period when the farmers cannot enter their field will be shorter, since the entire construction period of the project will be phased by the area.

2. **Question 2:** Masinde Juma said that the cooperation with the farmers was still good and prayed that it continues. He also thanked the Consultants for taking the complaints of the farmers and for agreeing to come back and solve the still pending problems. He further requested the Consultants to alert them in time so that they can mobilize for the farmers to stay around.

Question 2.1: Masinde raised the issue of the river meandering such that some parts of the river have been left out. This river acts as a boundary between Kween and Bulambuli. In between there is a land owner, where will that land owner be, is it in Kween or Bulambuli?

Response: The project is not going to change any boundary between the two districts. All land will remain the same apart from a little portion that will be taken by the project will be fully compensated by Government of Uganda. This project has not come to divide boundaries; the owner of the affected land will remain the same, so no worries of belonging anywhere.

River meandering – spots are very short and close to each other. River training will be done on two spots, try to re-direct the river so that it does not meander a lot. Dykes will to form the boundary of the districts, and if we are training in someone's land, that person will be compensated for. Training will be within the buffer zone of 30 meters.

3. **Question3:** Kitutu Patrick had reservations that this project was hatched by the people of Bulambuli, and JICA FS Study Team had initially told them the Bulambuli district would own 70% and Kween district would have 30%. But when there reached a time a lot of confusion came up, and now the project Bulambuli has only 45% and Kween has 55%! This is so unfair to the people of Bulambuli.

JICA for the sponsoring the project and assured them of total government support. He then cautioned the farmers especially those from Bulambuli who are now complaining that they were the first beneficiaries of the project but currently the biggest percentage of the project is located in Kween District. He gave an analogy of quote: "You are like people who refused to assist the lorry driver to push the lorry when it was stuck in the mud and after it started by the help of the few all the rest wanted to jump in" he warned them next time they should be very careful when handling projects.

He also emphasized the fact that this is a very important project to the government and people of Uganda because it is also the first of its kind. He thanked MAAIF for bringing on board other government Ministries and departments for the smooth implementation of Atari Irrigation Scheme. He thanked members for sparing their time to attend the meeting and wished everybody a safe journey home.

Response: Ms. Aish assured the meeting that this is a government project which should benefit everybody and the people should stop talking in terms of Bulambuli or Kween. First of all the communities have inter-married without any problem. The two districts are accommodating many tribes like the Ieso, Bagwere, Kenyans, Samyas etc. so the problem of the Bulambuli/Kween should not rise.

4. **Question 4:** Khabakha Sulai raised the issue of farmers not accessing their fields during the construction time and yet a lot of his food will be inside during the construction. How does he get food to feed his family?

Response: Eng. Lwanga responded that construction will be done in bits, and it will not take a long period when a site is condoned off, it may take say 2 -4 days only and that side is open for farmers to pass to go to their fields. The contractor will be very fast because the equipment he will use will be very expensive to hire so more time the contractor spends in a site the more expensive the project becomes.

5. **Question 5:** Ayeba Yasin's concern was that the day the construction starts all the land will be leveled, is it true or not? Then how will the machines work? He suggested that for the smooth running of the project, government should resettle the affected persons for say two years, feeding them with their families until the construction of the Scheme is completed.

Response: Mr Ayeba was referred to the above response and was told that the issue of leveling the land will be explained in the next stakeholder meeting.

6. **Question 6:** Chertwo Joselyn said that JICA Study Team went to her garden and planted pegs, when she asked them what the purpose is. Then, they told her that was a government project which was in a position to shift her to another place. But this is her green bank for her family.

Response: It seems there was a miscommunication at that time. However, when her field is needed to be acquired for the project, it will be compensated fully.

7. **Question 7:** Aziza Mwakwana Yahya complained that all her land has been consumed by the infrastructure. Her only livelihood is going to be taken away.

Response: She was re-assured that she will be fully compensated and she will be in a position to buy another piece of land.

Minute 8/02/2018: Closing Remarks

The Chairman, Mr. Nangai Geoffrey requested Mr. Chepkor Yusuf Juma the Assistant CAO Kween to address the meeting before closing remarks were presented. Yusuf informed the meeting that he was sent by the CAO Kween District to represent him because of the importance of this project to Kween District. He said they are very grateful for the good working relationship between the two communities on this project. The district is eagerly waiting for the fruits of the project and they pledge their utter support to the irrigation project.






The Chairman then invited Mr. Peter Welaya from the Ministry of Gender, Labour and Social Development to give the closing remarks. He started by appreciating the development partners

COMPLAINTS – KWEEN DISTRICT

Names	S/No	Type of Complaint
Asadu Mutai		He appears 3 times in the list provided by the surveyor but in the book he appears twice.
Matfahanse Issa	231	Appears once in the survey forms and in the list he is there twice.
Cheroto Michael	159	Does not appear in the receipt book Bought land from Sabitayo Robert but Sabitayo still registered the land in his names.
Bitali Rogers	173	Recorded as Bitali John.
Kweboi Simon	191	Does not appear in the valuation book
Abudu Saida	190	Does not appear in the valuation book
Khauka Musa	243	Does not appear in the valuation book
Matakwa Jenifer	198	Does not appear in the valuation book
Kapsandu Fred	Amukok el	There are pegs in his land but he does not appear anywhere.
Wanyayabilo Juma	136	Not in the list
Namarome Charles	-	He is between two people who have been interviewed but he does not appear anywhere. He is asking why?
Mwanga Aziz	-	Crops left out Avocado and Matoke
Mutai Asadi	193	Missing from the survey's list.
Wekesa John	-	Why are pegs in his land but he is not included
Waluye Bruhani		Not all the matooke was counted.
Chemonges Martin		The form shows that the land belongs to Siptayo Robert and yet he had already sold the land to Chemonges Martin.
Kisa James	Sikwa	Land not surveyed, waiting to be surveyed too

BULAMBULLI COMPLAINT LIST

No	Names	S/No	Type of complaint
1.	Swaibu Juma Masinde	296	The names should read as Masinde Twaha Moran Juma
2.	Kitutu Innocent	288	Names to read
3.	Cheromo Godfrey	340, 347, 349	Part of the land is being claimed by Mwenyi David
4.	Asiya Mutan	261	Correct name is Nambuya Asha. And part of the land is sold to Mukhongo David Issa
5.	Mukwana	378, 380	Correct name is Webisa Patrick
6.	Maifanane Issa	263	Affected crops not captured include:- Oranges – 78 Mangoes – 05 Bush tree – 01
7.	Wekesa Kaleb		Pegs are in his land but not captured in the assessment forms
8.	Zebulon Mutuma & Wabonga Peter	362	Following people appear on the forms: Mukunya Abdu Wajala Stephen Mutuma George Namuwu Alfred
9.	Wamalwa Stephen		Does not appear on the assessment book
10.	Mwajuma Nabangala		She was skipped
11.	Kisa David	393, 395, 404	All land sold to Wimu Enterprises Ltd
12.	Lutoti John	343	Sold part of his land to Wanyonyi Godfrey who is also affected
13.	Moje John	306	Sold all his land to Kakayi Sili via
14.	Simiyi Right	293	Correct spelling is Simiyi Raiti
15.	Mustafa Mooli	295	True owner is Mamdali Sam Wasungui
16.	Masinde Juma	143	True owner is Masinde Juma Wepukhulu
17.	Nakasala Daniel & Gambwa John	276, 277	Nalyanya Protus is not captured
18.	Mulemba & Khaukha	334, 305	Masaba Richard and Gizamba Nadaga Kasimu have bought some of his land
19.	Bagai Mutamiru	239	All land sold to Mwanga Andrew, Mwanga Razak and Wakinya James

	<p>Eng. Lwanga in blue giving his remarks</p>		<p>Mr. Nangai in blue giving the opening remarks</p>		<p>Members Gathered at the Venue</p>
					

Pictorial Expression of the First Stakeholder Meeting Held on 1st February 2018 at Atari Primary School Play Ground

No	Names	S/No	Type of complaint
20.	Kabeyi John, Wepolyo Augustine and Kundo Peter	335, 339, 345	Land shared amongst the following: Kabeyi John, Namakanda Rosemary Lubango Base, Mukhongo David Issa, Kisaka Sikola, Namono Sowena Wandvasi Mutawailbu, Musimani Ali Mwasame Godwin, Mwaswame Rashid Wamukote Shafik and Mugoma Bosco
21.	Maliro Chris	372	Correct name is Maliro Chris Kuterema
22.	Muhamad Kidale	462	Correct name is Gidale Muhamed Gizamba
23.	Nabiswa John	398	Part of the land sold to Wananda Stephen Richard who is also affected
24.	Inna Swaib Moran Nabiye Zebuloni Kiganda Micheal Kibinga David Majoni	296 367 379 391	These names appear on the assessment forms but do not appear in the list.
25.	Mandali Sam Nambuya Aisha Mbogo Irene		The names are in the list but not captured in the assessment forms.
26.	Serial numbers not captured by the assessor	464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, & 480	
27.	Abdul Mukunya		Appears once as owner and twice as a co-owner.

Annex 2. MINUTES OF THE SECOND STAKEHOLDERS MEETING FOR ATARI IRRIGATION SCHEME HELD ON 8TH JUNE 2018 AT ATARI PRIMARY SCHOOL

MINUTES OF THE SECOND STAKEHOLDERS MEETING FOR ATARI IRRIGATION SCHEME HELD ON 8TH JUNE 2018 AT ATARI PRIMARY SCHOOL

Date: 8th JUNE 2018
Venue: Atari Primary School Play Ground
Time: 14:00pm – 18:00pm
Language: English, Lumasaba and Kiswahili

Participants:

Stakeholder	Number	Remark
Ministry of Agriculture, Animal Industry, and Fisheries	5	Commissioner Engineer Kato Kayizzi, Engineer Benon Lwanga, Engineer Vivienne Nakakinda Mutumba, Engineer Reagan Yoweri Okwanga and Nyagoma Catherine
PDCC	4	From both sides
PACC	15	From both sides
Community members (Farmers etc.)	135	Including Project Affected Persons, and not affected persons.
Associated Engineering Surveyors Ltd.	5	Including Managing Director, Surveyor, Valuer, Lawyer and Sociologists.
Purpose	To update the Stakeholders on the progress of the RAP process and to solicit stakeholders concerns relating to the RAP	

Sign : Date: Sign:..... Date:

Representative of MAAIF Eng. Benon Lwanga Secretary RAP Consultant Mr. John B Orena Billa

Signed by

	All members taking a closer look at the map
	Women were active during question time
	Mr. Juma Masinde in blue asking his question
	Mr. Chepor CAO Kween in the middle giving his remarks
	Cherwyo Joselyn asking her question
	Mr. Peter Welaya (in blue) gave the closing remarks

AGENDA

1. Prayer
2. Introduction
3. A brief from Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)
4. Presentation from the RAP Consultant-AES
5. Reactions, Questions and Answers
6. Closing Remarks

Minute 1/06/2018: Opening Remarks

The meeting was called to order by Mr. Nangai Geoffrey, Chairperson Bulambuli PDCC Bulambuli District who was appointed to chair the meeting. He welcomed all members present and thereafter asked a volunteer to lead in a word of prayer and this was done by one of the farmers.

Minute 2/06/2018: Introduction

The meeting began with introductions where leaders from the two districts of Kween and Bulambuli were requested to introduce the teams they came with from their respective districts. Members from MAAIF introduced themselves and also RAP Consultant's team. The rest of the members were requested to introduce themselves in groups depending on where they come from.

Minute 3/06/2018: Project Objectives, Background and Scope from MAAIF

The Chairperson welcomed the participants and called the meeting to order. The team from the Ministry of Agriculture Animal Industry and Fisheries introduced themselves as well as the Consultants from Associated Engineers and Surveyors. Due to the large number of participants, it was decided that this was not necessary as they were going to register in the attendance list provided.

The Project Manager, Engineer Benon Lwanga, provided an elaborate introduction of the project, which was followed by a detailed overview by Ms. Elizabeth Aisu, a Senior Sociologist of the Consultancy team. Engineer Lwanga apologized for starting late as his team had to stop over at Bulambuli district headquarters for an official communication. Engineer Lwanga said highlighted that the project had now reached the climax of the RAP. Every PAP's details have been taken and a picture which the Consultant will show the meeting shortly. He also informed the meeting that outline design by the JICA team was also complete.

Engineer Lwanga assured the meeting that the project is following the JICA set up procedures to the letter and so the community should not get tired of waiting. He said that people should not talk about the Ngenge Irrigation scheme which is already under construction but it was just a matter of time that even ours of Atari is starting soon.

Engineer Lwanga informed the meeting that the Japanese are taking long to start because they want to do good job unlike the bridge in Kangole which was recently washed away by too much rains because not enough study was done.

Engineer Lwanga further informed the meeting that JICA team has to prepare a Soft Component. JICA team will come and work with you here, show you how the rice is grown and ensure that you succeed. Farmers have to maximize their income as much as possible, and that is what is called "Soft Component".

On Land Re-organization, Engineer informed the meeting that the Ministry is challenged financially, but planning for a model organized farming. Farmers who are willing to give land for this model organized farm can do so for a small area first to show others.

Schedule of Construction:

The construction process is going to inconvenience people but for a short time. Construction will be in four phases, two phases in Sikwo and the other two in Bunambute. Once one area has been gazetted for construction, the farmers from that area will not be able to use that area. So there is need for farmers to plan for that period by storing food for time they will not be in production. This is mainly because of safety issues, no one should be injured or lose life due the construction equipment. The construction is likely to take six months to one year, under which that place is gazetted and will be no entry to farmers. He asked the farmers to be patient and cooperative.

Minute 4/06/2018: Presentation from the Consultant:

Ms. Aisu registered her happiness of being before the meeting this time presenting the data so far collected way back in January and February 2018. The two studies done included;

- Social Economic Baseline study,
- RAP Census

Social Economic Baseline Survey

The Social Economic Study was done in four (4) villages in Bunambute Sub County and three (3) in Sikwo. Interviews were carried on about 274 people and the report was produced pending approval from JICA and MAAIF before it can be disclosed to the public. Ms. Aisu pointed out that according to the social economic survey, it was noted that average age of the community was between 18 – 49 years of age which accounts to 70% and this means that the project will get the much needed labour. Ms. Aisu further noted that the survey also showed that most of the people in the project area are married and settled which is much needed for people to work together. 86% people interviewed are married in Bulambuli and 78% are married in Kween. All this adds up to the stability in the community which will embrace the project.

It was also noted that in the education standard in the project area was very poor, with only 1% of the respondents had attained university in Bulambuli and 0.9% had reached university in Kween district. Ms. Aisu informed the meeting that with this project, this is expected to change, because parents are expected to educate their children after getting income from the project.

It was also noted that most respondents Catholics, a good number were Muslims, Church of Uganda and others giving a good picture that majority of the people are religious, this helps in information dissemination, and it also confirms that the people in the project area live in harmony with each other despite affiliating to different religions which is very good for the project.

The study further showed that most people in the project area are mostly peasants and subsistence farmers. Public servants are more in Bulambuli. This project is expected to change this trend from subsistence farming to commercial farming.

In terms of vulnerability, the study showed that people in Bulambuli are older than those in Kween. Very few disabilities were reported in both districts, and people in Kween are poorer than their counterparts in Bulambuli.

Ownership of houses; it was noted that 81% own houses, very few are renting and many are renting in Kween.

House status; many live in grass thatched huts, built with mud and wattle, most houses are not cemented. Ms. Aisu informed the meeting that this type of houses should change with the commencement of this project.

When the interviewed people were asked how they came to know about this project, 87% said they got the information from the sensitization teams, 51% from Local Council chairpersons and 17% from JICA members. Asked about Standard of living comparison within households, results showed that 44% are poor, 42% are average, 10% are very poor and 2% are rich. This trend is expected to change after the project because the main purpose of the irrigation scheme is to make people better economically.

Project Affected Persons Census

A census of all project affected persons was also conducted and this was aimed at getting all particulars of PAPs including the demographic characteristics, number of people in their households, identifying the amount of land affected by the project infrastructure, counting the crops and trees in the affected land and also identifying those whose houses or other property was going to be affected.

Members were informed that the project is going to affect approximately 423 household heads and 2007 individuals who are members of these households. Of these 172 are from Bulambuli District and 251 from Kween District. Among the PAPs in Bulambuli, 17 are female while 155 are men, in Kween 42 are female and 209 are male. There are also 65 people whose plots are in the buffer zone and these will also be compensated.

Members were also informed that some PAPs have more than one plot with some of them having as many as 7 – 8 plots. PAPs were advised not to wonder so much or compare their compensation money to others because those with many plots will receive more money.

Aisu informed the PAPs that the PAPs Register containing their details was going to be displayed at the SDA church for 3 days for them to go and confirm their details including spellings of their names before the final register is made. Even those PAPs whose photos were not taken the first time have a chance to take them this time round. PAPs were advised to be patient and not ask about how much they were assessed until the Chief Government Valuer verifies and approves the valuation report.

After the presentations, PAPs/members present were asked if the study results truly reflect what is on the ground. All were in agreement apart from district officials from Kween who said the results of latrine coverage were a bit exaggerated because they are aware that latrine coverage is low in their area. However, they were quick to say that the answers given during the interview could have been affected by the fact that people usually shy away in accepting that they do not have latrines. Otherwise all the rest of the results were confirmed to be true and the district officials requested for the copies of the RAP report to be disclosed in their districts and also for their libraries.

Minute 5/06/2018: Reactions, Questions and questions

1. Question:

JICA/MAAIF/AES

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Kundu Bernard: Asked that they were promised that the construction would start in March 2018 and they have been eagerly waiting because we expect to benefit a lot from this project. In addition we expect that after the land has been re-organized the flooding will be controlled as you can see we are really suffering with water which is everywhere right now.

Answer: Engineer Benon informed him that this project is being funded by a grant of over 100 Billion from the Government of Japan and for that matter all processes have to be followed to the dot since the Japanese are very strict and would not like to hurry the processes without proper documentation and ensuring that the project will succeed. He was informed the meeting that construction will not start until all PAPs are paid and right now we are in the process of completing the RAP, have people paid, then the detailed feasibility studies will take place. Construction is expected to begin 2020. He therefore requested the farmers to bear with the slow process but expect best results where all parties will be happy.

2. Question: Suluta John asked if his graves located within the project area will be compensated for.

Answer: He was informed that compensation will be only for the land going to be affected by the irrigation infrastructure such as: roads, main canals, secondary canals and primary canals. However from the survey done no graves were identified in the affected land therefore no compensation will be given for graves which are not affected.

3. Question: Mukono Godfrey asked that during implementation people shall not be allowed to work in their fields within the project area, what method will be put in place in order for them to get food during construction?

Answer: MAAIF Commissioner, Mr. Kato reiterated that RAP study has budgeted for livelihood restoration for all the PAPs and some of this money will be used provide food during construction. However, he also cautioned PAPs to plan for this period and cooperate with MAAIF and the contractor in ensuring that people do not suffer much during the construction period. Farmers will also be required to volunteer land for land reorganization and farm demonstration which will be used as a model farm to show farmers on how to maximize yields from a small piece of land.

4. Question: Butali asked that during project implementation, our lands will be no go zone; does this mean that our land is now for government?

Answer: Engineer Lwanga responded that government was not going to take anybody's land, the purpose of the project is to eradicate poverty in the community and your land will remain yours. The request to avoid going to the land is only for safety purposes because huge equipment will be used and accidents are likely to take place therefore to be on the safe side people will be required to avoid going to the construction site which will be condoned off.

5. Question: Another question from Butali was whether the lawyer in the team was to help government to acquire their land or help the consultants.

Answer: Engineer Lwanga answered him that the lawyer was here to help guide on the legal matters arising out the land acquisition and he was here to help both MAAIF and PAPs. He again emphasized that the project is for the people but not for grabbing their land.

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6. **Question:** Amangusio informed the meeting that one of the PAPs is sick and admitted in Kapehorwa hospital, how will he be part of the ongoing exercise?
7. **Answer:** Ms. Elizabeth informed him that Rose will draft a note for him to give Amangusio or anybody next of kin the right to sign for him/her. Even those PAPs who are in prison will be given a consent note drafted by lawyer to take to them in prison to sign on and allow their next of kin to represent them in matters regarding their land.
8. **Question:** Another person complained that the project affected his land and houses and some houses have already fallen down and he was wondering when he will be compensated.
- Answer:** He was told that compensation cannot be done in piece meals, all people affected will be compensated at once when Chief Government Valuer approves the RAP report, he was requested to be patient and wait until the appropriate time comes. Upon consultation, it was ascertained that this particular person is outside the project area and his houses fell down due to him abandoning his home. So no compensation will be given to him since he is not part of those affected by the project.

Minute 6/06/2018: Closing Remarks

Engineer Kato Kayizzi from MAAIF made the closing remarks; he started by thanking all members for coming in such big numbers. He reminded them they have come a long way since 2013 when the idea was introduced to the farmers; indeed it was not easy to convince the farmers to accept the project. He thanked the PACC and PDCC members for the good work they have done in keeping the farmers informed about the project process.

He assured farmers that although funds for land re-organization were not yet found they as MAAIF are going to engage other donors/funders to assist in funding this component therefore farmers were requested to be patient and cooperative as they wait.

He also mentioned that rice growing comes with other disadvantages like keeping children out of school while helping parents to chase away birds. This will not improve on the education standards in the area. He therefore mentioned that he is going to lobby the JICA team to construct a Community Centre which can be used for night studies by students in the project area. The community hall can also be used for other purposes like holding meetings and training farmers.

He thanked the RAP Consultant (AES) for the good work done and asked them to ensure that the RAP approval process is expedited; he promised to personally follow up with colleagues in the Ministry of Lands, Housing and Urban Development in the Chief Government Valuer's office to fast track the RAP valuation report approval.

The meeting closed on a good note at 6:00 pm and all dispersed.

	
	
<p>Meeting in Progress</p> <p>Kween Team Introducing themselves</p>	

Signed

Chairman

Secretary

資料-12. 水収支計算

[Case-FS]

Year: 2004

Soroti

Metrology Station Name :

River basin : Atari Irrigation Scheme

Water Balance Analysis

First Seasi Second Season

Inigation Coverag(%) (Maize):	680	River basin :	103	Unit water Requirement (Urban) :	20	Number of Investock :	1,720	TLU	0	Number of cooperative members :	0
(Maize):	0	River maintenance flow :	0.166	Unit water Requirement (Rural) :	40	Average Unit water Requirement of Investock :	50	TLU/day	60	Average Unit water Requirement of Industry :	60
Irigation efficiency :	69%										

S.N.	Description	Jan		Feb		Mar		Apr		May		June		July		Aug		Sept		Oct		Nov.		Dec.		Total	
		15	16	15	13	15	16	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15		100%
I. WATER REQUIREMENT																											
I.1. Irrigation Water Requirement																											
ETc (mm/day)		5.9	5.9	6.1	6.1	6.1	6.1	5.3	5.3	4.4	4.4	4.5	4.5	3.8	3.8	4.2	4.2	5.0	5.0	5.0	5.0	5.2	5.2	5.6	5.6	122.2	
CROPS (Paddy) Kc										1.05	1.07	1.14	1.20	1.20	1.20	1.12	1.12	1.05	1.07	1.07	1.14	1.20	1.20	1.20	1.12	0.97	17.90
ETc (mm/day)										4.62	4.71	5.13	5.40	4.56	4.56	4.70	4.07	5.25	5.35	5.35	5.70	6.00	6.24	6.24	6.27	5.43	84.23
Shading & Paddling (mm/day)										10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Precipitation (mm/day)										15.62	15.62	6.13	6.40	5.56	5.56	5.70	5.07	16.25	16.25	6.35	6.70	7.00	7.24	7.24	7.27	6.43	120.23
Total (mm/day)										234.30	91.36	91.95	96.00	83.40	88.96	85.50	81.12	243.75	95.25	100.50	112.00	108.60	108.60	109.05	102.88	183.22	
Rain (mm/month)																											
Rain fall (mm)		39.2	43.6	2.1	47.3	10.7	40.8	101.1	118.7	118.7	12.0	54.5	64.1	22.4	37.6	93.6	55.9	43.2	94.7	94.7	34.5	34.0	58.6	98.3	3.9	36.3	1,286
Effective Rainfall (mm)		27.0	29.0	0.0	34.0	0.0	28.0	70.0	85.0	85.0	9.0	38.0	35.0	14.0	21.0	72.0	40.0	18.0	53.0	53.0	24.0	4.0	29.0	68.0	0.0	25.0	808
Effective Rainfall for Rice (mm)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.00	9.00	38.00	35.00	14.00	21.00	72.00	40.00	18.00	53.00	53.00	24.00	4.00	29.00	68.00	0.00	25.00	808
Net Iri. Required per half month (mm)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	149.30	82.36	53.95	61.00	69.40	67.96	13.50	41.12	225.75	42.25	76.50	108.00	79.60	40.60	109.05	77.88	1298.22	
Net Iri Field Required (l/ha)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.152	0.996	0.416	0.471	0.535	0.492	0.104	0.297	1.742	0.326	0.590	0.781	0.614	0.313	0.841	0.863	9.83	
Net Iri Required (l/s)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	783.360	462.280	282.88	320.28	363.80	334.56	70.72	201.96	998.17	186.80	338.07	447.51	351.82	179.35	481.89	322.60	6069.05	
Net Iri Required (m³/s)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.783	0.465	0.283	0.320	0.364	0.335	0.071	0.202	0.998	0.187	0.338	0.448	0.352	0.179	0.482	0.323	6.07	
Net Iri Required (m³/s)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.783	0.465	0.283	0.320	0.364	0.335	0.071	0.202	0.998	0.187	0.338	0.448	0.352	0.179	0.482	0.323	6.07	
Gross Iri Required (m³/s)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.305	0.675	0.472	0.533	0.607	0.558	0.118	0.337	1.663	0.312	0.563	0.747	0.587	0.298	0.803	0.538	10.12	
Gross Iri Required (m³)		0	0	0	0	0	0	0	0	1,691,280	933,120	611,712	690,768	786,672	771,379	152,928	465,869	2,155,248	404,332	729,648	1,032,653	760,752	386,208	1,040,688	743,731	13,357,008	
I.2. Life Water Requirement																											
Life Water Requirement (l/s)		20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	488.88
Life Water Requirement (m³/s)		0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.48
Life Water Requirement (m³)		25,920	27,648	25,920	22,464	25,920	27,648	25,920	25,920	25,920	25,920	25,920	25,920	25,920	27,648	25,920	27,648	25,920	25,920	25,920	25,920	27,648	25,920	25,920	25,920	27,648	630,720
I.3. Water Requirement for Industries																											
Water Requirement for Livestock (l/s)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	23.89
Water Requirement for Livestock (l/s)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sub-total (l/s)		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	23.89
Sub-total (m³/s)		0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.02
Sub-total (m³)		1,296	1,382	1,296	1,123	1,296	1,382	1,296	1,296	1,296	1,382	1,296	1,296	1,382	1,382	1,296	1,382	1,296	1,296	1,296	1,296	1,382	1,296	1,296	1,296	1,382	31,533
I.4. Water Requirement for Environment																											
Total Water Requirement (m³/s)		0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	4.10
Total Water Requirement (m³)		221,616	236,390	221,616	192,067	221,616	236,390	221,616	221,616	221,616	221,616	221,616	221,616	221,616	236,390	221,616	236,390	221,616	221,616	221,616	221,616	236,390	221,616	221,616	221,616	236,390	5,392,653

Water Balance Analysis

River basin : Atari Irrigation Scheme

Metrology Station Name : Soroti

Year : 2004

[Case-FS]

First Seasi Second Season

Inigation Coverage(Excl) :
(Maize) :
Irrigation efficiency : 69%

River basin : 103 km²
River maintenance flow : 0.166 m³/s/100km²

Urban Population : 0
Rural Population : 44,000

Unit water Requirement (Urban) : 20 // person day
Unit water Requirement (Rural) : 40 // person day

Number of livestock : 1,720 TLU
Average Unit water Requirement of livestock : 50 // TLU/day

Number of cooperative members : 0
Average Unit water Requirement of Industry : 60 // person/day

S.N	Description	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov.	Dec.	Total
Total Water Requirement														
	Total Water Requirement (m ³ /s)	0.192	0.192	0.192	0.192	1.497	0.867	0.799	0.750	1.855	0.755	0.779	0.995	14.7
	Total Water Requirement (m ³)	248,832	215,664	248,832	248,832	1,940,112	1,198,540	1,035,504	1,036,799	2,404,080	978,480	1,009,584	1,289,520	19,411,914
	Total Water Requirement (MCM)	0.2	0.2	0.2	0.2	1.9	1.2	1.0	1.0	2.4	0.7	1.0	1.3	19.1
Discharges from basin														
	Discharges from basin (m ³ /s)	0.240	0.140	0.140	0.850	2.530	0.890	0.800	2.380	1.880	2.900	5.220	2.720	38.46
	Discharges from basin (m ³)	311,040	181,440	181,440	1,101,600	3,278,880	1,230,336	1,016,800	3,290,112	2,436,480	3,758,400	6,705,120	3,525,120	50,784,192
	Discharges from basin (MCM)	0.3	0.2	0.2	1.1	3.3	1.2	1.0	3.3	2.4	3.8	6.8	3.5	50.8
Balance														
	Discharges from basin (m ³ /s)	0.048	▲ 0.052	▲ 0.052	0.658	1.033	0.023	0.001	1.630	0.025	1.136	4.441	2.220	23.74
	Discharges from basin (m ³)	62,208	▲ 67,392	▲ 67,392	852,768	1,338,768	31,796	85,536	2,253,313	32,400	1,472,256	2,779,920	1,864,391	31,372,278
	Discharges from basin (MCM)	0.1	▲ 0.1	▲ 0.1	0.9	1.3	0.0	0.0	2.3	0.0	1.5	2.8	2.0	31.5

Source: FS Revised

Water Balance Analysis

River basin : Atari Irrigation Scheme

Metrology Station Name : Soroti

Year : 2004

[Case-OD]

First Season, Second Season

Irrigation Coverage(Rice) : 550 680 ha River basin : 103 km²
 (Maize) : 130 0 River maintenance flow : 0.166 m³/s/100m²
 Irrigation efficiency : 60 %

Urban Population : 0
 Rural Population : 44,000

Unit water Requirement (Urban) : 70 l/person/day
 Unit water Requirement (Rural) : 40 l/person/day

Number of livestock : 1,200 TLU
 Average Unit water Requirement of livestock : 50 l/TLU/day

Number of cooperative members : 0
 Average Unit water Requirement of Industry : 60 l/person/day

S.N.	Description	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Rice	Ratio of Irrigation Area	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
	Ratio of Irrigation Area	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%	34%
	Ratio of Irrigation Area	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
	Ratio of Irrigation Area	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
	Days	15	16	15	15	16	15	15	16	15	15	16	15	15
I-WATER REQUIREMENT														
I.1. Irrigation Water Requirement														
	ETc (mm/day)	5.9	6.1	6.1	5.3	4.4	4.5	3.8	4.2	5.0	5.0	5.2	5.6	122.2
	CROPS (Paddy) Kc				1.05	1.07	1.20	1.12	1.05	1.07	1.14	1.20	1.12	0.97
	ETc (mm/day)				5.57	5.02	5.40	4.26	4.41	5.35	5.70	6.00	6.24	5.82
	Saturation & Paddling (mm/day)				10.00				10.00					5.43
	Precipitation (mm/day)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Total (mm/day)	17.57	7.67	7.02	7.38	7.40	7.40	6.26	5.69	7.35	7.70	8.00	8.24	7.82
	CROPS (Paddy) Kc				1.05	1.07	1.20	1.20	1.12	1.05	1.14	1.20	1.12	0.97
	ETc (mm/day)				5.57	4.71	5.02	4.56	4.26	5.25	5.35	5.70	6.00	6.24
	Saturation & Paddling (mm/day)				10.00					10.00				5.43
	Precipitation (mm/day)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Total (mm/day)	15.57	6.71	7.02	7.40	7.40	7.40	6.56	6.07	7.25	7.35	7.70	8.24	7.43
	CROPS (Paddy) Kc				1.05	1.07	1.14	1.20	1.12	1.05	1.07	1.14	1.20	1.12
	ETc (mm/day)				4.62	4.71	5.13	4.56	4.70	5.25	5.35	5.70	6.24	6.27
	Saturation & Paddling (mm/day)				10.00					10.00				85.24
	Precipitation (mm/day)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Total (mm/day)	7.72	0.00	0.00	16.62	6.71	7.13	7.40	6.56	6.70	7.35	7.70	8.24	8.27
	Total (mm/half month)	39.37			86.97	115.04	109.62	111.00	96.92	121.77	119.67	126.37	123.60	137.24
	CROPS (Maize) Kc				0.30	0.39	0.75	1.11	0.14	0.30	0.39	0.75	1.11	0.70
	ETc (mm/day)				1.59	2.07	3.30	4.88	0.59	1.50	1.95	3.75	5.55	6.24
	Saturation & Paddling (mm/day)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
	Precipitation (mm/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total (mm/day)	0.83	0.00	0.00	1.59	2.07	3.30	4.88	0.59	1.50	1.95	3.75	5.55	6.24
	CROPS (Maize) Kc				0.30	0.39	0.75	1.11	0.14	0.30	0.39	0.75	1.11	0.70
	ETc (mm/day)				1.59	1.72	3.30	5.00	2.94	1.50	1.95	3.75	5.77	6.16
	Precipitation (mm/day)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total (mm/day)	4.13	0.83	0.00	1.59	1.72	3.30	5.40	4.56	1.50	1.95	3.75	5.77	6.63
	Total (mm/half month)	37.20	6.64		11.93	27.45	37.65	78.00	65.55	25.88	42.75	74.40	90.08	80.64

Water Balance Analysis

River basin : Atari Irrigation Scheme

Metrology Station Name : Soroti

Year : 2004

[Case-OD]

First Season Second Season

Irrigation Coverage(Rice) : 550 680 ha

River basin : 103 km²

River maintenance flow : 0.166 m³/s/100m²

Irrigation efficiency : 60 %

Urban Population : 0

Rural Population : 44,000

Unit water Requirement (Urban) : 70 l/person/day

Unit water Requirement (Rural) : 40 l/person/day

Number of livestock : 1,200 TLU

Average Unit water Requirement of livestock : 50 l/TLU/day

Number of cooperative members : 0

Average Unit water Requirement of Industry : 60 l/person/day

S.N.	Description	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Rain (half month)														
	Rain fall (mm)	39.2	43.6	2.1	47.3	10.7	40.8	101.1	118.7	118.7	118.7	118.7	118.7	1,200
	Effective Rainfall (mm)	27.0	29.0	0.0	34.0	0.0	28.0	70.0	85.0	85.0	85.0	85.0	85.0	808
	Effective Rainfall for Rice(mm)	27.0	0.0	0.0	0.0	0.0	0.0	70.0	85.0	85.0	85.0	85.0	85.0	808
	Effective Rainfall for Maize(mm)	0.0	6.64	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Net Irr. Required per half month (mm)	12.37	0.0	0.0	0.0	16.97	30.04	67.73	103.01	71.62	76.00	82.92	77.78	1,337.67
	Net Irr. Field Required (L/ha)	0.095	0.000	0.000	0.000	0.131	0.232	0.523	0.745	0.553	0.586	0.640	0.563	10.11
	Net Irr. Required (L/s)	52.250	0.000	0.000	0.000	72.050	127.600	287.650	409.750	304.15	322.30	352.00	309.65	6,270.40
	Net Irr. Required (m ³ s)	0.052	0.000	0.000	0.000	0.128	0.128	0.288	0.410	0.304	0.322	0.352	0.310	6.27
	Net Irr. Required per half month (mm)	37.20	0.00	0.00	0.00	11.93	27.45	37.65	65.44	78.00	81.00	85.55	54.72	482.36
	Net Irr. Field Required (L/ha)	0.287	0.000	0.000	0.000	0.092	0.212	0.291	0.473	0.602	0.625	0.586	0.396	3.66
	Net Irr. Required (L/s)	37.310	0.000	0.000	0.000	11.940	27.560	37.830	61.490	78.260	81.250	85.780	51.480	476.06
	Net Irr. Required (m ³ s)	0.037	0.000	0.000	0.000	0.012	0.028	0.038	0.061	0.078	0.081	0.066	0.051	0.48
	Net Irr. Required (m ³ s)	0.089	0.000	0.000	0.000	0.084	0.156	0.326	0.471	0.382	0.408	0.418	0.361	6.27
	Gross Irr. Required (m ³ s)	0.148	0.000	0.000	0.000	0.140	0.260	0.543	0.785	0.637	0.672	0.697	0.602	11.25
	Gross Irr. Required (m ³)	191.808	0	0	0	181.440	356.960	703.728	1,085.184	825.552	870.912	903.312	832.205	14,868.144
1.2. Life Water Requirement														
	Life Water Requirement (L/s)	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	20.37	488.88
	Life Water Requirement (m ³ s)	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.48
	Life Water Requirement (m ³)	25.920	27.648	25.920	27.648	25.920	27.648	25.920	27.648	25.920	27.648	25.920	27.648	630.720
1.3. Water Requirement for Industries														
	Water Requirement for Livestock (L/s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	23.89
	Water Requirement for Industries (L/s)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub-total (L/s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	23.89
	Sub-total (m ³ s)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.02
	Sub-total (m ³)	1.296	1.382	1.296	1.296	1.382	1.296	1.382	1.296	1.382	1.296	1.382	1.296	31.533
1.4. Water Requirement for Environment														
	Total Water Requirement (m ³ s)	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	0.171	4.10
	Total Water Requirement (m ³)	221.616	236.390	221.616	221.616	236.390	221.616	236.390	221.616	221.616	236.390	221.616	221.616	5,309.653
Total Water Requirement														
	Total Water Requirement (m ³ s)	0.340	0.192	0.192	0.332	0.452	0.735	0.889	0.977	0.829	0.864	0.889	0.794	15.9
	Total Water Requirement (m ³)	440.640	265.420	248.832	430.272	585.792	952.560	1,152.144	1,197.444	1,074.384	1,119.744	1,152.144	1,097.625	20,923.050
Discharges from basin														
	Discharges from basin (m ³ s)	0.610	0.640	0.560	0.960	1.260	0.980	1.110	0.980	0.890	0.890	0.980	0.890	33.06
	Discharges from basin (m ³)	790.560	884.736	725.760	1,344.160	1,632.960	2,462.400	1,354.752	1,153.440	1,488.560	1,205.380	2,502.144	3,071.520	45,581.024
	Discharges from basin (MCM)	0.8	0.9	0.7	1.2	1.6	1.4	1.4	1.4	1.2	1.4	1.2	1.1	4.56
Balance														
	Discharges from basin (m ³ s)	0.270	0.448	0.568	0.388	0.388	0.358	0.448	0.448	0.448	0.448	0.448	0.448	17.21
	Discharges from basin (m ³)	349.920	619.316	476.928	438.888	1,047.168	1,509.840	4,148	79,066	318,816	53,136	1,404,519	2,781,216	22,657.974
	Discharges from basin (MCM)	0.3	0.6	0.5	0.8	1.0	1.5	0.0	0.1	0.3	0.1	1.4	2.8	2.5

MAIN SUMMARY			
BILL NO	DESCRIPTION	PAGE NO.	AMOUNT (UGX)
1	PROPOSED WAREHOUSE	1/S/4	1,181,691,000
2	PROPOSED GARAGE	2/S/10	141,238,360
3	PROPOSED ADMINISTRATION	3/S/16	335,276,800
4	EXTERNAL WORKS	4/S/22	302,750,500
5	PROPOSED WAREHOUSE	5/S/26	837,665,600
	SUB-TOTAL 1		2,798,622,260
	ADD: CONTINGENCIES (To be expended in whole or in part as directed by the Client)	5%	139,931,113
	SUB-TOTAL 2		2,938,553,373
	ADD: VAT	18%	528,939,607
	GRAND TOTAL		3,467,492,980

Japanese Yen
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107,839,032
962,419

PROPOSED WAREHOUSE

ELEMENT	DESCRIPTION	AMOUNT (UGX)
	<p>BILL No. 1</p> <p><u>PROPOSED WAREHOUSE</u> SUMMARY</p>	
1	SUBSTRUCTURE	379,319,300
2	SUPERSTRUCTURE	390,990,200
3	ROOF CONSTRUCTION AND CEILING	366,381,500
4	ELECTRICAL	45,000,000
	<p>TOTAL BILL No.1 (PROPOSED RESIDENTIAL UNITS) CARRIED TO MAIN SUMMARY</p>	1,181,691,000

BILL No. 1
PROPOSED WAREHOUSE

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No.1 SUBSTRUCTURE Excavations and Earthworks				
A	Excavate Oversite to remove vegetable soil, shrubs, small trees and the like, average 200mm thick, and cart away from site	m ²	2,500	5,000	12,500,000
B	Excavate to reduce levels not exceeding 150mm deep	m ³	375	5,000	1,875,000
C	Excavate surface trenches: not exceeding 1.50 metres deep from reduced levels to receive wall foundations	m ³	195	5,000	975,000
D	Ditto: the column pad foundation to the same depth	m ³	98	6,000	585,000
F	Allow for keeping excavations free from all water	Item	1	1,500,000	1,500,000
G	Allow for supporting sides of excavations	Item	1	3,500,000	3,500,000
H	Return, fill and ram selected excavated materials around foundations in layers not exceeding 200mm thick	m ³	190	5,000	950,000
I	Remove surplus excavated materials from site	m ³	90	12,000	1,080,000
	Hardcore filling				
J	150mm bed, consolidated, levelled and blinded with a layer of sand (measured separately).	m ²	2,450	15,000	36,750,000
K	50mm Thick sand blinding to hardcore bed	m ²	2,450	5,000	12,250,000
	Termidor 25 EC' or other equal approved anti-termite chemical treatment: applied by an approved professional pest control specialist: strictly in accordance with the manufacturer's instructions: to				
L	Sides and bottom of foundations	m ²	155	1,500	232,500
M	Ditto. But to hardcore area	m ²	2,450	1,500	3,675,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				75,872,500
B	Vibrated plain in-situ concrete (Class 15) as described in:- Vibrated plain concrete grade 20 as described in:- 200mm Thick in strip foundations	m ²	28	80,000	2,240,000

BILL No. 1 : 1/1/1

SUBSTRUCTURE

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
C	150mm Thick in Oversite Concrete slab Vibrated reinforced concrete grade 25 as described in:-	m ²	2,500	80,000	200,000,000
E	Column bases	m ³	23	550,000	12,650,000
F	Column starter stubs	m ³	3	550,000	1,650,000
G	Groundbeam Mild steel round bars to BS 4483 as described including cutting to length, bending, hoisting and fixing	m ³	24	550,000	13,200,000
I	8mm diameter bars: in column stubs High yield square twisted cold formed bars to BS4461 including cutting to length, bending, hoisting and fixing and including all necessary tying wire and spacing blocks	Kg	648	4,000	2,592,800
J	12mm diameter bars: in bases	Kg	1,629	4,000	6,516,000
K	16mm diameter bars: in column starter stubs Sawn formwork as described to:-	Kg	610	4,000	2,440,000
M	Sides: of column bases	m ²	90	18,000	1,620,000
N	Ditto: of column stubs	m ²	58	18,000	1,044,000
	Ditto: of ground beam	m ²	158	18,000	2,844,000
O	Solid burnt clay brickwork in cement sand (1:4) mortar as described in:- 200mm plinth walling	m ²	398	50,000	19,900,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				266,696,800
A	Damp proof membrane Single layer of 1000 gauge polythene laid on blinded hardcore with 150mm minimum side and end laps A142 BRC Mesh with 200mm end and side laps in:	m ²	2,450	2,500	6,125,000
B	Oversite Concrete Slab	m ²	2,450	12,500	30,625,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				36,750,000
	Collection of Element No.1(SUBSTRUCTURE)				

BILL No. 1 : 1/1/2

SUBSTRUCTURE

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	FROM PAGE 1/1/1				75,872,500
	FROM PAGE 1/1/2				266,696,800
	FROM PAGE 1/1/3				36,750,000
	TOTAL ELEMENT No. 1 (SUBSTRUCTURE) CARRIED TO BILL SUMMARY				379,319,300

PROPOSED GARAGE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
A	ELEMENT No. 2 SUPERSTRUCTURE Element A - WALLING AND FRAME Hessian based bituminous felt or other approved damp-proof course laid on and including 25mm cement and sand (1:3) mortar as described under:- 200mm wall	m	210	2,000	420,000
B	WALLING <u>Solid concrete blockwork in cement sand (1:4) mortar as described in:-</u> 200mm Thick walling FRAME <u>Vibrated insitu concrete grade 25 as described:-</u>	m ²	1,491	55,000	82,005,000
C	Columns Beam at 2.8m Ring beams 150mm Solid slab	m ³ m ³ m ³ m ³	12 18 14 16	550,000 550,000 550,000 550,000	6,820,000 10,120,000 7,590,000 8,800,000
G	<u>Mild steel round bars to BS 4483 as described including cutting to length, bending, hoisting and fixing</u> 8mm diameter bars: in column 8mm diameter bars: in Beam at 2.8m 8mm diameter bars: in ring beam <u>High tensile ribbed steel bar reinforcement as described:-</u> 12mm Diameter bars (in Columns) 12mm Diameter bars (in ringbeams) 12mm Diameter bars (in beams) 16mm Diameter bars (in beams) 16mm Diameter bars (in Columns)	Kg Kg Kg Kg Kg Kg Kg	648 648 648 577 854 845 1,011 1,138	4,000 4,000 4,000 4,000 4,000 4,000 4,000	2,592,800 2,592,800 2,592,800 2,309,200 3,414,400 3,380,000 4,044,800 4,550,400
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE) Sawn Formwork as described to:-				141,232,200
O	Sides and soffits of beam at 2.8m	m ²	158	18,000	2,844,000

PROPOSED GARAGE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Sides and soffits of Columns	m ²	216	18,000	3,888,000
	Sides and soffits of ringbeams	m ²	138	18,000	2,484,000
	Sides and soffits of slab	m ²	234	18,000	4,212,000
	Element C - DOORS Pre-cast concrete grade 25 200 x 100mm Lintel reinforced and including 4No 12mm diameter steel bars and 6mm mild steel links at 200mm centres including hoisting and bedding in position in cement mortar (1:3)	m	36	36,000	1,296,000
	STEEL CASEMENT Supply, assemble and fix steel doors constructed from standard steel sections to BS 1474:1972 bronze anodised before delivery to site complete with 5mm Thick sheet glass glazed with rubber beads, including all necessary ironmongery, to Architect's details	No	9	7,500,000	67,500,000
	Element D - INTERNAL WALL FINISHES Plastering 15mm Cement, lime and sand (1:2:9) plaster in two coats trowelled hard and smooth on walls	m ²	1,272	15,000	19,080,000
	Painting Prepare and apply one mist coat and three finishing coats first grade matt emulsion paint : on Plastered walls	m ²	2,450	9,000	22,050,000
	Element E - FLOOR FINISHES 25mm Cement and sand (1:3) screed finished to receive tiles (measured separately) to:	m ²	2,450	10,000	24,500,000
	General floor areas	m ²	2,450	10,000	24,500,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				65,630,000
	Porcelain floor tiling laid on cement and sand screed (measured separately) with and including tile adhesive including pointing to all joints:				
	8mm Thick tiles (General areas)	m ²	2,450	60,000	147,000,000
	Element G - EXTERNAL FINISHES WALLS				

BILL No. 1:

2/2/2

PROPOSED GARAGE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
A	Rendering 25mm Thick cement and sand (1:4) render. wood floated: on masonry	m ²	1,092	12,000	13,104,000
C	Painting Prepare and apply three coats of first grade weatheguard Mumoran Textured paint : on rendered wall surfaces	m ²	1,092	22,000	24,024,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				184,128,000
	Collection of Element No. 2 (SUPERSTRUCTURE)				
	FROM PAGE 1/2/1				141,232,200
	FROM PAGE 1/2/4				65,630,000
	FROM PAGE 1/2/5				184,128,000
	TOTAL ELEMENT No. 2 (SUPERSTRUCTURE) CARRIED TO BILL SUMMARY				390,990,200

BILL No. 1:

2/2/3

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Roof Construction The following in roof construction comprising of structural steel rectangular and square hollow sections in trusses welded and jointed with gusset plates and bolts including hoisting and fixing approximately 20mm above ground level				
	The following in 31 No. (Type T1) Trusses of 30m span				
A	50 x 100 x 5mm RHS Tie beam	kg	7,899	9,000	71,086,500
B	50 x 100 x 5mm RHS Rafters	kg	7,617	9,000	68,551,200
C	50 x 60 x 4mm RHS Internal members	kg	4,799	9,000	43,192,800
C	40 x 40 x 3mm SHS Bracing members	kg	2,680	9,000	24,120,000
C	30 x 30 x 2mm SHS Bracing members	kg	976	9,000	8,784,000
	Roof Covering				
A	IT - 4 profile resin coated (gauge 26) pre-painted galvanized iron roofing sheets fixed in accordance with manufacturer's specifications with approved bolts	m ²	2,125	45,000	95,625,000
B	Half round matching ridge / hip capping with galvanised ms filler blocks of roof profile shape fitted to edges of capping	lm	63	14,000	882,000
C	150 x 50 x 20x 2mm zed purlins with anti sag rods at mid span	lm	1,498	35,000	52,430,000
	Truss fixing				
D	16mm diameter bolts grade 4.6, 250mm long with head nut and washer on either side of bolt	no	134	9,500	1,273,000
D	14mm diameter bolts grade 4.6, 100mm long with head nut and washer on either side of bolt	no	46	9,500	437,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				366,381,500

BILL No. 1 :

1/5/1

ROOF

PROPOSED RESIDENTIAL UNITS

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No. 4 ELECTRICAL INSTALLATIONS (All provisional)				
A	Allow a Provisional sum of Forty five million Shillings Only(UGX 45,000,000) for Electrical installation, distribution and fittings	PS	1	45,000,000	45,000,000
	TOTAL ELEMENT No. 9 (ELECTRICAL INSTALLATIONS) CARRIED TO BILL SUMMARY				45,000,000

BILL No. 1 :

1/7/1

ELECTRICAL

PROPOSED GARAGE

ELEMENT	DESCRIPTION	AMOUNT (UGX)
	<p>BILL No. 2</p> <p><u>PROJECT GARAGE</u> SUMMARY</p>	
1	SUBSTRUCTURE	35,393,760
2	SUPERSTRUCTURE	30,899,000
3	ROOF CONSTRUCTION AND CEILING	69,945,600
4	ELECTRICAL	5,000,000
	<p>TOTAL BILL No. 1 (PROPOSED RESIDENTIAL UNITS) CARRIED TO MAIN SUMMARY</p>	<p>141,238,360</p>

BILL No. 2
PROPOSED GARAGE

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No.1 SUBSTRUCTURE Excavations and Earthworks				
A	Excavate Oversite to remove vegetable soil, shrubs, small trees and the like, average 200mm thick, and cart away from site	m ²	200	5,000	1,000,000
B	Excavate to reduce levels not exceeding 150mm deep	m ³	30	5,000	150,000
C	Excavate surface trenches: not exceeding 1.50 metres deep from reduced levels to receive wall foundations	m ³	51	5,000	256,500
D	Ditto: the column pad foundation to the same depth	m ³	5	6,000	31,800
E	Allow for keeping excavations free from all water	Item	1	500,000	500,000
F	Allow for supporting sides of excavations	Item	1	500,000	500,000
G	Return, fill and ram selected excavated materials around foundations in layers not exceeding 200mm thick	m ³	21	5,000	105,000
H	Remove surplus excavated materials from site	m ³	10	12,000	114,000
	Hardcore filling				
I	150mm bed, consolidated, levelled and blinded with a layer of sand (measured separately).	m ²	167	15,000	2,505,000
J	50mm Thick sand blinding to hardcore bed	m ²	167	5,000	835,000
	Termidor 25 EC' or other equal approved anti-termite chemical treatment: applied by an approved professional pest control specialist: strictly in accordance with the manufacturer's instructions: to				
K	Sides and bottom of foundations	m ²	49	1,500	73,500
L	Ditto. But to hardcore area	m ²	167	1,500	250,500
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				6,321,300
	Vibrated plain in-situ concrete (Class 15) as described in:-				
A	200mm Thick in strip foundations	m ²	7	80,000	552,000

BILL No. 2 : 1/1/1

SUBSTRUCTURE

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
B	150mm Thick in Oversite Concrete slab Vibrated reinforced concrete grade 25 as described in:-	m ²	167	80,000	13,360,000
C	Column bases	m ³	5	550,000	2,887,500
D	Column starter stubs	m ³	1	550,000	495,000
	Groundbeam	m ³	3	550,000	1,881,000
E	Mild steel round bars to BS 4483 as described including cutting to length, bending, hoisting and fixing 8mm diameter bars: in column stubs	Kg	143	4,000	572,000
	High yield square twisted cold formed bars to BS4461 including cutting to length, bending, hoisting and fixing and including all necessary tying wire and spacing blocks				
F	12mm diameter bars: in bases	Kg	515	4,000	2,058,400
G	16mm diameter bars: in column starter stubs	Kg		4,000	-
	Sawn formwork as described to:-				
H	Sides: of column bases	m ²	37	18,000	666,000
I	Ditto: of column stubs	m ²	18	18,000	324,000
J	Ditto: of ground beam	m ²	3	18,000	61,560
	Solid burnt clay brickwork in cement sand (1:4) mortar as described in:-				
K	200mm plinth walling	m ²	74	50,000	3,710,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				26,567,460
	Damp proof membrane				
A	Single layer of 1000 gauge polythene laid on blinded hardcore with 150mm minimum side and end laps	m ²	167	2,500	417,500
	A142 BRC Mesh with 200mm end and side laps in:-				
B	Oversite Concrete Slab	m ²	167	12,500	2,087,500
C	Provide base plates 300x300x12mm thick and fixed to the concrete starter columns	No	10	125,000	1,250,000
D	20mm diameter bolts grade 4.6, 350mm long with head nut and washer on either side of bolt	no	40	25,000	1,000,000

BILL No. 2 : 1/1/2

SUBSTRUCTURE

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				2,505,000
	<u>Collection of Element No. 1 (SUBSTRUCTURE)</u>				
	FROM PAGE 1/1/1				6,321,300
	FROM PAGE 1/1/2				26,567,460
	FROM PAGE 1/1/3				2,505,000
	TOTAL ELEMENT No. 1 (SUBSTRUCTURE) CARRIED TO BILL SUMMARY				35,393,760

BILL No. 2 :

1/1/3

SUBSTRUCTURE

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	<u>ELEMENT No. 2 SUPERSTRUCTURE</u>				
	<u>FRAME</u> Steel members of grade 275				
A	Columns (254x102x22kg)	Kg	834	9,500	7,923,000
B	Ring beams (254x102x22kg)	Kg	1,188	9,500	11,286,000
	<u>Element E - FLOOR FINISHES</u> 25mm Cement and sand (1:3) screed finished to receive tiles (measured separately) to:				
A	General floor areas	m ²	167	10,000	1,670,000
	<u>Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)</u>				20,879,000
	<u>Porcelain tiles floor tiling laid on cement and sand screed (measured separately) with and including tile adhesive including pointing to all joints:</u>				
B	8mm Thick tiles (General areas)	m ²	167	60,000	10,020,000
	<u>Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)</u>				10,020,000
	<u>Collection of Element No. 2 (SUPERSTRUCTURE)</u>				
	FROM PAGE 1/2/4				20,879,000
	FROM PAGE 1/2/5				10,020,000
	TOTAL ELEMENT No. 2 (SUPERSTRUCTURE) CARRIED TO BILL SUMMARY				30,899,000

BILL No. 2 :

2/2/1

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Roof Construction <u>The following in roof construction comprising of structural steel round and square hollow sections in trusses welded and jointed with gusset plates and bolts including hoisting and fixing approximately 8.0mm above reserved level</u>				
	The following in 6 No. (Type T2) Trusses of 9m span				
A	40 x 60 x 4mm RHS Tie beam	kg	342	9,000	3,078,000
B	40 x 60 x 4mm SHS Rafter	kg	411	9,000	3,699,000
C	40 x 40 x 3mm SHS Internal members	kg	243	9,000	2,187,000
D	30 x 30 x 2mm SHS Bracing members	kg	109	9,000	984,600
E	25 x 25 x 2mm SHS Bracing members (End of 6 No. Trusses)	kg	87	9,000	783,000
	Roof Covering				
F	IT - 4 profile resin coated (gauge 26) pre-painted galvanized iron roofing sheets fixed in accordance with manufacturer's specifications with approved bolts	m ²	215	45,000	9,675,000
G	Half round matching ridge / hip capping with galvanised ms filler blocks of roof profile shape fitted to edges of capping	lm	24	14,000	336,000
H	Expanded metal lath over eaves nailed to and including 50 x 100mm framing and battens 15mm thick cement/sand backing and plaster	m ²	167	60,000	10,020,000
I	150 x 50 x 20x 2mm zed purlins with anti sag rods at mid span	lm	1,056	35,000	36,960,000
	Truss fixing				
J	12mm diameter bolts grade 4.6, 250mm long with head nut and washer on either side of bolt	no	234	9,500	2,223,000
	Total Carried to Collection of Element No. 1 (ROOF AND CEILING)				69,945,600

BILL No. 2 :

1/5/1

ROOF

PROPOSED RESIDENTIAL UNITS

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No. 5 ELECTRICAL INSTALLATIONS (All provisional)				
A	Allow a Provisional sum of Five million Shillings Only(UGX 5,000,000) for Electrical installation, distribution and fittings	PS	1	5,000,000	5,000,000
	TOTAL ELEMENT No. 9 (ELECTRICAL INSTALLATIONS) CARRIED TO BILL SUMMARY				5,000,000

BILL No. 2 :

1/7/1

ELECTRICAL

PROPOSED RESIDENTIAL UNITS

ELEMENT	DESCRIPTION	AMOUNT (UGX)
	BILL No. 3 <u>PROPOSED TRAINING CENTER</u> SUMMARY	
1	SUBSTRUCTURE	89,068,000
2	SUPERSTRUCTURE	88,090,300
3	ROOF CONSTRUCTION AND CEILING	133,118,500
4	ELECTRICAL	25,000,000
	TOTAL BILL No. 2 (PROPOSED RESIDENTIAL HOUSE) CARRIED TO MAIN SUMMARY	335,276,800

BILL No. 3

PROPOSED TRAINING CENTER

PROPOSED TRAINING CENTER

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No.1 SUBSTRUCTURE Excavations and Earthworks				
A	Excavate Oversite to remove vegetable soil, shrubs, small trees and the like, average 200mm thick, and cart away from site	m ²	310	5,000	1,550,000
B	Excavate to reduce levels not exceeding 150mm deep	m ³	58	5,000	290,000
C	Excavate surface trenches: not exceeding 1.50 metres deep from reduced levels to receive wall foundations	m ³	126	5,000	630,000
D	Ditto: the column pad foundation to the same depth	m ³	11	6,000	67,200
E	Allow for keeping excavations free from all water	Item	1	1,000,000	1,000,000
F	Allow for supporting sides of excavations	Item	1	2,000,000	2,000,000
G	Return, fill and ram selected excavated materials around foundations in layers not exceeding 200mm thick	m ³	86	5,000	430,000
H	Remove surplus excavated materials from site	m ³	67	12,000	804,000
	Hardcore filling				
I	150mm bed, consolidated, levelled and blinded with a layer of sand (measured separately).	m ²	386	15,000	5,790,000
J	50mm Thick sand blinding to hardcore bed	m ²	386	5,000	1,930,000
	Termidor 25 EC' or other equal approved anti-termite chemical treatment: applied by an approved professional pest control specialist: strictly in accordance with the manufacturer's instructions: to				
K	Sides and bottom of foundations	m ²	32	1,500	48,000
L	Ditto. But to hardcore area	m ²	386	1,500	579,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				15,118,200
	Vibrated plain in-situ concrete (Class 15) as described in:-				
M	200mm Thick in strip foundations	m ²	14	80,000	1,120,000

BILL No. 3: 1/1/1

SUBSTRUCTURE

PROPOSED TRAINING CENTER

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
N	150mm Thick in Oversite Concrete slab Vibrated reinforced concrete grade 25 as described in:-	m ²	386	80,000	30,880,000
O	Column bases	m ³	11	550,000	6,160,000
P	Column starter stubs	m ³	2	550,000	1,056,000
Q	Groundbeam	m ³	7	550,000	3,960,000
R	Mild steel round bars to BS 4483 as described including cutting to length, bending, hoisting and fixing 8mm diameter bars: in column stubs	Kg	75	4,000	300,000
S	High yield square twisted cold formed bars to BS4461 including cutting to length, bending, hoisting and fixing and including all necessary tying wire and spacing blocks 12mm diameter bars: in bases	Kg	338	4,000	1,351,680
T	12mm diameter bars: in column starter stubs	Kg	225	4,000	901,120
	Sawn formwork as described to:-				
U	Sides: of column bases	m ²	45	18,000	810,000
V	Ditto: of column stubs	m ²	11	18,000	198,000
W	Ditto: of ground beam	m ²	72	18,000	1,296,000
X	Solid burnt clay brickswork in cement sand (1:4) mortar as described in:- 200mm plinth walling	m ²	420	50,000	21,000,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				69,064,800
	Damp proof membrane				
A	Single layer of 1000 gauge polythene laid on blinded hardcore with 200mm minimum side and end laps	m ²	24	2,500	60,000
B	A142 BRC Mesh with 200mm end and side laps in:- Oversite Concrete Slab	m ²	386	12,500	4,825,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				4,885,000
	Collection of Element No.1(SUBSTRUCTURE)				

BILL No. 3: 1/1/2

SUBSTRUCTURE

PROPOSED TRAINING CENTER

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	FROM PAGE 1/1/1				15,118,200
	FROM PAGE 1/1/2				69,064,800
	FROM PAGE 1/1/3				4,885,000
	TOTAL ELEMENT No. 1 (SUBSTRUCTURE) CARRIED TO BILL SUMMARY				89,068,000

PROPOSED TRAINING CENTER

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No. 2 SUPERSTRUCTURE				
	Element A - WALLING AND FRAME Hessian based bituminous felt or other approved damp-proof course laid on and including 25mm cement and sand (1:3) mortar as described under:-				
A	200mm wall	m	120	2,000	240,000
	WALLING Solid concrete blockwork in cement sand (1:4) mortar as described in:-				
B	200mm Thick walling	m ²	420	55,000	23,100,000
	FRAME Vibrated insitu concrete grade 25 as described:-				
C	Columns	m ³	5	550,000	2,750,000
D	Ring beams	m ³	10	550,000	5,280,000
	Mild steel round bars to BS 4483 as described including cutting to length, bending, hoisting and fixing				
E	8mm diameter bars: in column	Kg	203	4,500	912,000
F	8mm diameter bars: in ring beam	Kg	328	4,500	1,476,000
	High tensile ribbed steel bar reinforcement as described:-				
G	12mm Diameter bars (in Columns)	Kg	451	4,500	2,027,700
H	12mm Diameter bars (in ringbeams)	Kg	644	4,500	2,898,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				38,684,300
	Sawn Formwork as described to:				
I	Sides and soffits of Columns	m ²	82	18,000	1,474,560
J	Sides and soffits of ringbeams	m ²	117	18,000	2,104,200
	Element C - DOORS Precast concrete grade 25				

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
A	200 x 100mm Lintel reinforced and including 4No 12mm diameter steel bars and 6mm mild steel links at 200mm centres including hoisting and bedding in position in cement mortar (1:3)	m	2	36,000	75,600
	STEEL CASEMENT <u>Supply, assemble and fix steel doors constructed from standard steel sections to BS 1474:1972 bronze anodised before delivery to site complete with 5mm Thick sheet glass glazed with rubber beads, including all necessary ironmongery, to Architect's details</u>				
B	Main Entrance door size 1200 x 2400mm high overall	No	1	1,500,000	1,500,000
C	Main Entrance door size 900 x 2400mm high overall	No	1	550,000	550,000
	Element B - WINDOWS <u>Precast Concrete Grade 25 as described</u>				
A	300 x 65mm (average) Weathered and throated cill, bedded and jointed in cement mortar (1:3) and finished fair on exposed faces	m	36	12,000	428,400
	STEEL CASEMENT <u>Supply, assemble and fix Steel Windows constructed from standard steel sections to BS 1474:1972 bronze anodised before delivery to site complete with 5mm Thick sheet glass glazed with rubber beads, including all necessary ironmongery, to Architect's details</u>				
B	Window size 2100 x 1500mm high overall	No	17	850,000	14,450,000
C	Painting Prepare and apply three coats of emulsion paint on concrete cill 200 - 300mm girth	m	187	7,500	1,402,500
D	Timber Doors <u>45mm Thick leaf solid complete core interior quality flush door with hardwood veneer in filling; all to Architect's details;</u>				
D	Door size 1200 x 2400mm high with pvo	No	1	1,800,000	1,800,000
E	Door size 900 x 2400mm high with pvo	No	2	950,000	1,900,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				5,102,500
F	Door stopper	No	2	5,000	10,000
G	Single acting stainless steel ball bearings hinges	Prs	2	18,000	36,000

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
H	Painting Prepare and apply three coats of polyurethane varnish on wood surfaces	m ²	5	9,000	45,360
I	Do. But on wood surfaces 200 - 300mm girth	m	20	2,700	55,080
J	Do. But on wood surfaces not exceeding 100mm girth	m		1,000	-
	Element D - INTERNAL WALL FINISHES				
A	Plastering 15mm Cement,lime and sand (1:2:9) plaster in two coats trowelled hard and smooth on walls	m ²	546	15,000	8,190,000
	Painting <u>Prepare and apply one mist coat and three finishing coats first grade matt emulsion paint : on</u>				
B	Plastered walls	m ²	546	9,000	4,914,000
	Element E - FLOOR FINISHES <u>25mm Cement and sand (1:3) screed finished to receive tiles (measured separately) to:</u>				
A	General floor areas	m ²	386	10,000	3,860,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				16,964,000
	<u>Porcelain tiles floor tiling laid on cement and sand screed (measured separately) with and including tile adhesive including pointing to all joints;</u>				
B	8mm Thick tiles (General areas)	m ²	386	60,000	23,160,000
	Element G - EXTERNAL FINISHES WALLS				
A	Rendering 25mm Thick cement and sand (1:4) render, wood floated: on masonry	m ²	273	12,000	3,276,000
B	Painting Prepare and apply three coats of first grade weatherguard Marmoran Textured paint : on rendered wall surfaces	m ²	273	22,000	6,006,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				32,442,000
	Collection of Element No. 2 (SUPERSTRUCTURE)				

PROPOSED TRAINING CENTER

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	FROM PAGE 1/2/1				38,684,300
	FROM PAGE 1/2/4				16,964,000
	FROM PAGE 1/2/5				32,442,000
	TOTAL ELEMENT No. 2 (SUPERSTRUCTURE) CARRIED TO BILL SUMMARY				88,090,300

PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Roof Construction <u>The following in roof construction comprising of structural steel round and square hollow sections in trusses welded and jointed with gusset plates and bolts including hoisting and fixing approximately 8.0mm plate required to be used</u>				
A	The following in 6 No. (Type T3) Trusses of 18m span 50 x80 x 5mm Angle RHS Rafters	kg	2,319	9,000	20,866,500
B	50 x 50 x 4mm SHS Internal members (End of 6 No. Trusses)	kg	1,098	9,000	9,882,000
	Roof Covering				
C	IT - 4 profile resin coated (gauge 26) pre-painted galvanized iron roofing sheets fixed in accordance with manufacturer's specifications with approved bolts	m ²	483	45,000	21,735,000
D	Half round matching ridge / hip capping with galvanised ms filler blocks of roof profile shape fitted to edges of capping	lm	85	14,000	1,190,000
E	Expanded metal lath over eaves nailed to and including 50 x 100mm framing and battens 15mm thick cement/sand backing and plaster	m ²	386	60,000	23,160,000
F	150 x 50 x 20x 2mm zed purlins with anti sag rods at mid span	lm	1,576	35,000	55,160,000
	Truss fixing				
G	14mm diameter bolts grade 4.6, 250mm long with head nut and washer on either side of bolt	no	150	7,500	1,125,000
	Total Carried to Collection of Element No. 1 (ROOF)				133,118,500

PROPOSED RESIDENTIAL UNITS

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
A	<p>ELEMENT No. 5</p> <p><u>ELECTRICAL INSTALLATIONS</u></p> <p><u>(All provisional)</u></p> <p>Allow a Provisional sum of twenty five million Shillings Only(UGX 25,000,000) for Electrical installation, distribution and fittings</p>	PS	1	25,000,000	25,000,000
TOTAL ELEMENT No. 9 (ELECTRICAL INSTALLATIONS) CARRIED TO BILL SUMMARY					25,000,000

BILL No. 4

PROPOSED EXTERNAL WORKS

PROPOSED EXTERNAL WORKS

ELEMENT	DESCRIPTION	AMOUNT (UGX)
	BILL No. 4	
	PROPOSED RESIDENTIAL UNITS SUMMARY	
1	EXTERNAL WORKS	210,910,500
2	FURNITURE	91,840,000
	TOTAL BILL No. 2 (PROPOSED RESIDENTIAL HOUSE) CARRIED TO MAIN SUMMARY	302,750,500

PROPOSED EXTERNAL WORKS

Item	Description	Qty	Unit	Rate (USHS)	Amount (USHS)
EXTERNAL WORKS					
A	Wall Fencing Provide materials and construct a wall fence including the foundation and plastering	275	SM	55,000	15,125,000
B	Razor wire 500mm diameter coiled razor wire with sharp pointed razors, fixed on top of chainlink fence (M/S) to detail	90	LM	25,000	2,250,000
C	Mild Steel Gates Fabricate and fix Mild steel gate size 5000mm wide x 2500mm high overall in 2No operable leaves in 75mm x 75mm x 6mm RHS framing including 50 x 50mm x 4mm thick SHS pointed rails & braces, stiffeners, complete with bolts, locks, hinges, fixing lugs all to Architect's detailed design	1	NO.	5,000,000	5,000,000
F	Prepare and apply three coats of gloss oil paint on steel gate (Both sides)	31	SM	15,000	465,000
G	Ditto emulsion paint on rendered gate columns	2	SM	15,000	30,000
Total carried to collection					
22,870,000					
M	Interlocking paver blocks Provide all the materials necessary to cast concrete of 150mm thick and of grade 15 on the compound	1760	SM	45,000	79,200,000
O	Parking lines 25mm wide yellow parking lines	9	LM	4,500	40,500
P	Gardening Grass seedlings Allow for the construction of a generator room	3	lumpsum	15,000,000	45,000,000
Q	Allow for the construction of a toilet including the septic tank to the clients requirement a sum of twenty million shillings	1	lumpsum	20,000,000	20,000,000
R	Storm water channel 300mm Wide x 200mm deep (internal) drainage channel comprising precast concrete storm water channel : including excavation, and disposal as per Architect's detail	235	LM	80,000	18,800,000
GENERATOR ROOM					
S	Allow a Provisional sum of Ten million Shillings Only(UGX 10,000,000) for the construction of a generator room to completion	PS	1	10,000,000	10,000,000
TOILET					
T	Allow a Provisional sum of fifteen million Shillings Only(UGX 15,000,000) for the construction of a toilet to completion	PS	1	15,000,000	15,000,000

PROPOSED EXTERNAL WORKS

Item	Description	Qty	Unit	Rate (USHS)	Amount (USHS)
	Total carried to collection				188,040,500
	COLLECTION				
	Total carried forward from page 2/1				22,870,000
	Total carried forward from page 2/2				188,040,500
	Total carried to summary				210,910,500
	COLLECTION				
	Collection of Element No.1				
	FROM PAGE 3/1/1				210,910,500
	TOTAL ELEMENT No. 1 (SUBSTRUCTURE) CARRIED TO BILL SUMMARY				210,910,500

FURNITURE

Item	Description	Unit	Qty	Rate (USHS)	Amount (USHS)
	EXTERNAL WORKS				
A	Office desk	no.	15	750,000	11,250,000
B	Office Chair	no.	15	350,000	5,250,000
C	Bookshelf for office	no.	6	1,500,000	9,000,000
D	Chair equipped small table for training room	no.	70	150,000	10,500,000
E	Curtain for office, entrance hole & training room	m	24	35,000	840,000
F	Pallet for agricultural product storage	no.	100	550,000	55,000,000
	Total carried to collection				91,840,000
	COLLECTION				
	Total carried forward from page 2/1				91,840,000
	TOTAL ELEMENT No. 1 (SUBSTRUCTURE) CARRIED TO BILL SUMMARY				91,840,000

PROPOSED WAREHOUSE 2

ELEMENT	DESCRIPTION	AMOUNT (UGX)
	<p>BILL No. 5</p> <p><u>PROPOSED WAREHOUSE</u> SUMMARY</p>	
1	SUBSTRUCTURE	231,976,500
2	SUPERSTRUCTURE	277,010,400
3	ROOF CONSTRUCTION AND CEILING	293,678,700
4	ELECTRICAL	35,000,000
	<p>TOTAL BILL No.1 (PROPOSED RESIDENTIAL UNITS) CARRIED TO MAIN SUMMARY</p>	837,665,600

BILL No. 5

PROPOSED WAREHOUSE 2

PROPOSED WAREHOUSE. 2

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No.1 SUBSTRUCTURE Excavations and Earthworks				
A	Excavate Oversite to remove vegetable soil, shrubs, small trees and the like, average 200mm thick, and cart away from site	m ²	1,370	5,000	6,850,000
B	Excavate to reduce levels not exceeding 150mm deep	m ³	206	5,000	1,030,000
C	Excavate surface trenches: not exceeding 1.50 metres deep from reduced levels to receive wall foundations	m ³	189	5,000	945,000
D	Ditto: the column pad foundation to the same depth	m ³	265	6,000	1,590,000
F	Allow for keeping excavations free from all water	Item	1	1,200,000	1,200,000
G	Allow for supporting sides of excavations	Item	1	2,500,000	2,500,000
H	Return, fill and ram selected excavated materials around foundations in layers not exceeding 200mm thick	m ³	145	5,000	725,000
I	Remove surplus excavated materials from site	m ³	56	12,000	672,000
	Hardcore filling				
J	150mm bed, consolidated, levelled and blinded with a layer of sand (measured separately).	m ²	1,370	15,000	20,550,000
K	50mm Thick sand blinding to hardcore bed	m ²	1,370	5,000	6,850,000
	Termidor 25 EC' or other equal approved anti-termite chemical treatment: applied by an approved professional pest control specialist: strictly in accordance with the manufacturer's instructions: to				
L	Sides and bottom of foundations	m ²	125	1,500	187,500
M	Ditto. But to hardcore area	m ²	1,370	1,500	2,055,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				45,154,500
B	Vibrated plain in-situ concrete (Class 15) as described in:- Vibrated plain concrete grade 20 as described in:- 200mm Thick in strip foundations	m ²	16	80,000	1,296,000

BILL No. 5 : PROPOSED WAREHOUSE 2 1/1/1

SUBSTRUCTURE

PROPOSED WAREHOUSE. 2

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
C	150mm Thick in Oversite Concrete slab Vibrated reinforced concrete grade 25 as described in:-	m ²	1,370	80,000	109,600,000
E	Column bases	m ³	18	550,000	9,735,000
F	Column starter stubs	m ³	2	550,000	1,155,000
	Groundbeam	m ³	18	550,000	9,900,000
G	Mild steel round bars to BS 4483 as described including cutting to length, bending, hoisting and fixing 8mm diameter bars: in column stubs	Kg	623	4,000	2,492,000
	High yield square twisted cold formed bars to BS4461 including cutting to length, bending, hoisting and fixing and including all necessary tying wire and spacing blocks				
I	12mm diameter bars: in bases	Kg	1,589	4,000	6,356,000
J	16mm diameter bars: in column starter stubs	Kg	589	4,000	2,356,000
	Sawn formwork as described to:-				
M	Sides: of column bases	m ²	87	18,000	1,566,000
N	Ditto: of column stubs	m ²	54	18,000	972,000
O	Ditto: of ground beam	m ²	158	18,000	2,844,000
	Solid burnt clay brickswork in cement sand (1:4) mortar as described in:-				
P	200mm plinth walling	m ²	360	50,000	18,000,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				166,272,000
	Damp proof membrane				
A	Single layer of 1000 gauge polythene laid on blinded hardcore with 150mm minimum side and end laps	m ²	1,370	2,500	3,425,000
B	A142 BRC Mesh with 200mm end and side laps in:- Oversite Concrete Slab	m ²	1,370	12,500	17,125,000
	Total Carried to Collection of Element No. 1 (SUBSTRUCTURE)				20,550,000
	Collection of Element No.1(SUBSTRUCTURE)				

BILL No. 5 : PROPOSED WAREHOUSE 2 1/1/2

SUBSTRUCTURE

PROPOSED WAREHOUSE. 2

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	FROM PAGE 1/1/1				45,154,500
	FROM PAGE 1/1/2				166,272,000
	FROM PAGE 1/1/3				20,550,000
	TOTAL ELEMENT No. 1 (SUBSTRUCTURE) (CARRIED TO BILL SUMMARY)				231,976,500

PROPOSED WAREHOUSE 2

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No. 2 SUPERSTRUCTURE				
	Element A - WALLING AND FRAME				
	<u>Hessian based bituminous felt or other approved damp-proof course laid on and including 25mm cement and sand (1:3) mortar as described under:-</u>				
A	200mm wall	m	180	2,000	360,000
	WALLING				
	<u>Solid concrete blockwork in cement sand (1:4) mortar as described in:-</u>				
B	200mm Thick walling	m ²	1,008	55,000	55,440,000
	FRAME				
	<u>Vibrated insitu concrete grade 25 as described:</u>				
C	Columns	m ³	12	550,000	6,820,000
D	Beam at 2.8m	m ³	18	550,000	10,120,000
E	Ring beams	m ³	14	550,000	7,590,000
F	150mm Solid slab	m ³	16	550,000	8,800,000
	<u>Mild steel round bars to BS 4483 as described including cutting to length, bending, hoisting and fixing</u>				
G	8mm diameter bars: in column	Kg	648	4,000	2,592,800
H	8mm diameter bars: in Beam at 2.8m	Kg	564	4,000	2,256,000
I	8mm diameter bars: in ring beam	Kg	613	4,000	2,452,000
	<u>High tensile ribbed steel bar reinforcement as described:</u>				
J	12mm Diameter bars (in Columns)	Kg	577	4,000	2,309,200
K	12mm Diameter bars (in ringbeams)	Kg	854	4,000	3,414,400
L	12mm Diameter bars (in beams)	Kg	845	4,000	3,380,000
M	16mm Diameter bars (in beams)	Kg	897	4,000	3,588,000
N	16mm Diameter bars (in Columns)	Kg	1,083	4,000	4,332,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				113,454,400
	Sawn Formwork as described to:				
O	Sides and soffits of beam at 2.8m	m ²	134	18,000	2,412,000

PROPOSED WAREHOUSE 2

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
P	Sides and soffits of Columns	m ²	189	18,000	3,402,000
Q	Sides and soffits of ringbeams	m ²	105	18,000	1,890,000
A	Element C - DOORS Pre-cast concrete grade 25 200 x 100mm Lintel reinforced and including 4No 12mm diameter steel bars and 6mm mild steel links at 200mm centres including hoisting and bedding in position in cement mortar (1:3)	m	28	36,000	1,008,000
B	STEEL CASEMENT Supply, assemble and fix steel doors constructed from standard steel sections to BS 1474:1972 bronze anodised before delivery to site complete with 5mm Thick sheet glass glazed with rubber beads, including all necessary ironmongery, to Architect's details Main Entrance door size 4000 x 4000mm high overall	No	7	7,500,000	52,500,000
A	Element D - INTERNAL WALL FINISHES Plastering 15mm Cement,lime and sand (1:2:9) plaster in two coats trowelled hard and smooth on walls	m ²	1,272	15,000	19,080,000
D	Painting Prepare and apply one mist coat and three finishing coats first grade matt emulsion paint : on Plastered walls	m ²	1,272	9,000	11,448,000
A	Element E - FLOOR FINISHES 25mm Cement and sand (1:3) screed finished to receive tiles (measured separately) to: General floor areas	m ²	1,370	10,000	13,700,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				44,228,000
B	Element G - EXTERNAL FINISHES WALLS Rendering 8mm Thick tiles (General areas)	m ²	1,370	60,000	82,200,000

A13-22

PROPOSED WAREHOUSE 2

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
A	25mm Thick cement and sand (1:4) render wood floated: on masonry	m ²	1,092	12,000	13,104,000
C	Painting Prepare and apply three coats of first grade weatheguard Mur Moran Textured paint : on rendered wall surfaces	m ²	1,092	22,000	24,024,000
	Total Carried to Collection of Element No. 2 (SUPERSTRUCTURE)				119,328,000
	Collection of Element No. 2 (SUPERSTRUCTURE) FROM PAGE 1/2/1				113,454,400
	FROM PAGE 1/2/4				44,228,000
	FROM PAGE 1/2/5				119,328,000
	TOTAL ELEMENT No. 2 (SUPERSTRUCTURE) CARRIED TO BILL SUMMARY				277,010,400

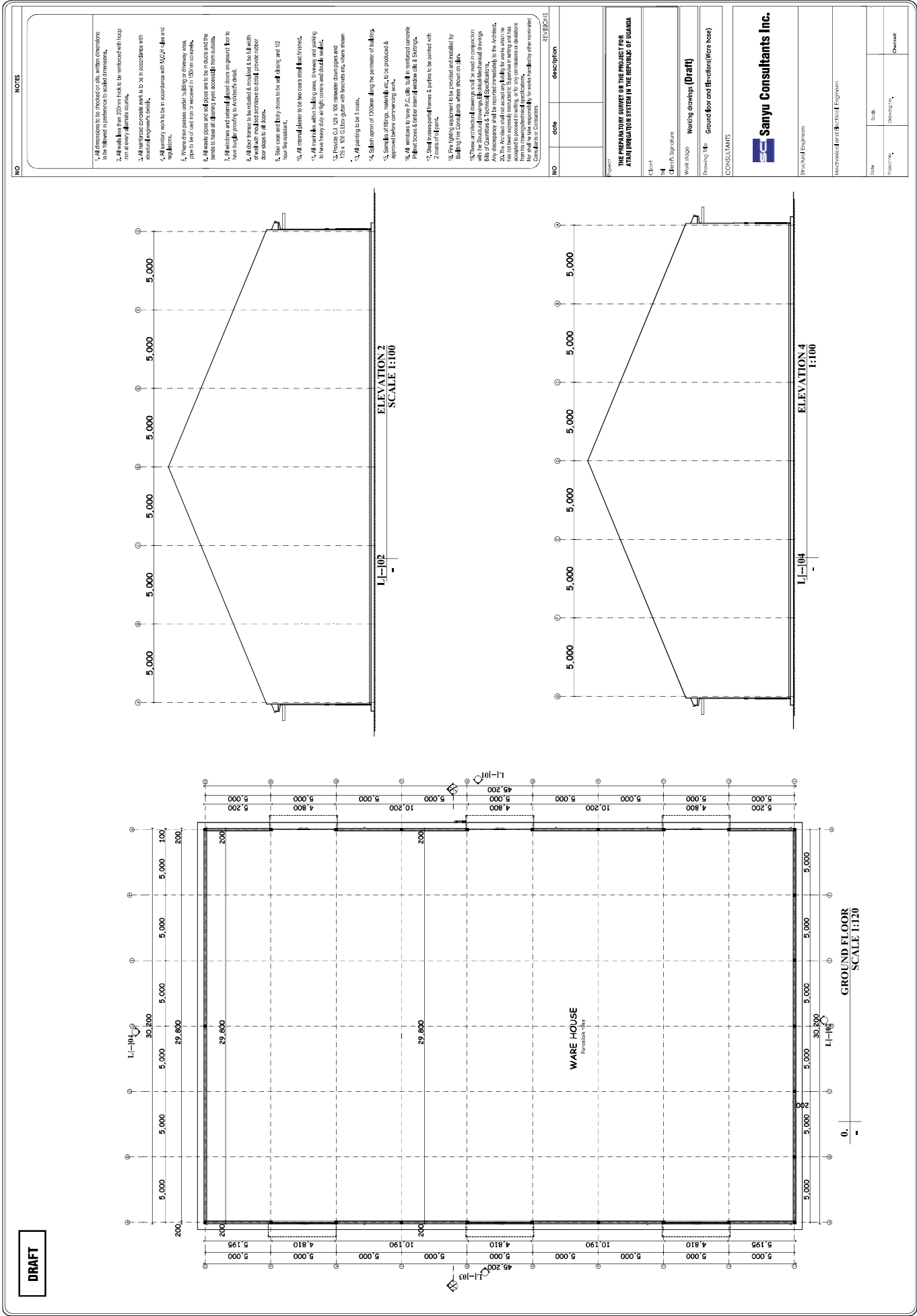
PROPOSED WAREHOUSE

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Roof Construction <u>The following in roof construction comprising of structural steel rectangular and square hollow sections in trusses welded and jointed with gusset plates and bolts including hoisting and fixing approximately 4 items above mentioned item</u>				
	The following in 31 No. (Type T1) Trusses of 30m span				
A	50 x 100 x 5mm RHS Tie beam	kg	5,967	9,000	53,703,000
B	50 x 100 x 5mm RHS Rafters	kg	5,894	9,000	53,046,000
C	50 x 60 x 4mm RHS Internal members	kg	3,599	9,000	32,393,700
C	40 x 40 x 3mm SHS Bracing members	kg	1,876	9,000	16,884,000
C	30 x 30 x 2mm SHS Bracing members	kg	564	9,000	5,076,000
	Roof Covering				
A	IT - 4 profile resin coated (gauge 26) pre-painted galvanized iron roofing sheets fixed in accordance with manufacturer's specifications with approved bolts	m ²	2,125	45,000	95,625,000
B	Half round matching ridge / hip capping with galvanised ms filler blocks of roof profile shape fitted to edges of capping	lm	63	14,000	882,000
C	Expanded metal lath over eaves nailed to and including 50 x 100mm framing and battens 15mm thick cement/sand backing and plaster	m ²		60,000	-
J	150 x 50 x 20x 2mm zed purlins with anti sag rods at mid span	lm	1,498	23,000	34,454,000
	Truss fixing				
K	14mm diameter bolts grade 4.6, 250mm long with head nut and washer on either side of bolt	no	134	9,500	1,273,000
L	12mm diameter bolts grade 4.6, 250mm long with head nut and washer on either side of bolt	no	36	9,500	342,000
	Total Carried to Collection of Element No. 1				293,678,700

PROPOSED RESIDENTIAL UNITS

ITEM	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	ELEMENT No. 5 ELECTRICAL INSTALLATIONS (All provisional) Allow a Provisional sum of Thirty five million Shillings Only(UGX 35,000,000) for Electrical installation, distribution and fittings	PS	1	35,000,000	35,000,000
	TOTAL ELEMENT No. 9 (ELECTRICAL INSTALLATIONS) CARRIED TO BILL SUMMARY				35,000,000

Bulambuli Plans



DRAFT

NO. NOTES

1. All dimensions to be indicated in millimeters, unless otherwise specified.
2. All walls to be 200mm thick to be rendered with hoop reinforcement.
3. All concrete to be cast in accordance with M20/F-100 and to be finished to the required level.
4. All primary work to be in accordance with M20/F-100 and to be finished to the required level.
5. Where slabs are cast under existing structures, the slab shall be cast on a minimum 100mm concrete base.
6. All waste pipes and floor drains to be recessed into the concrete to a depth of 20mm below the finished floor level.
7. All windows and doors to be set in concrete to a depth of 20mm below the finished floor level.
8. All floor drains to be recessed and moulded to be flush with the finished floor level.
9. All doors to be set in concrete to a depth of 20mm below the finished floor level.
10. All internal plaster to be two coats sand float finish.
11. All internal walls to be finished with 10mm thick plaster to have a finish of white wash and double coat.
12. Provide C1, 25 x 100 rebar down pipes and 125 x 100 C100 grates with translucent covers in room.
13. All painting to be 3 coats.
14. Submit a plan of 1000mm above the perimeter of building.
15. Submit a plan of 1000mm above the perimeter of building and to be finished to the required level.
16. All windows to be set in concrete to a depth of 20mm below the finished floor level.
17. All doors to be set in concrete to a depth of 20mm below the finished floor level.
18. All glazing equipment to be provided and installed by the contractor.
19. These drawings are for information only and are not to be used for construction without the approval of the Engineer.
20. Any discrepancies shall be reported immediately to the Architect.
21. The contractor shall be responsible for any omissions or deviations from the drawings and shall be held responsible for any omissions or deviations.

NO.	DATE	DESCRIPTION	REVISIONS

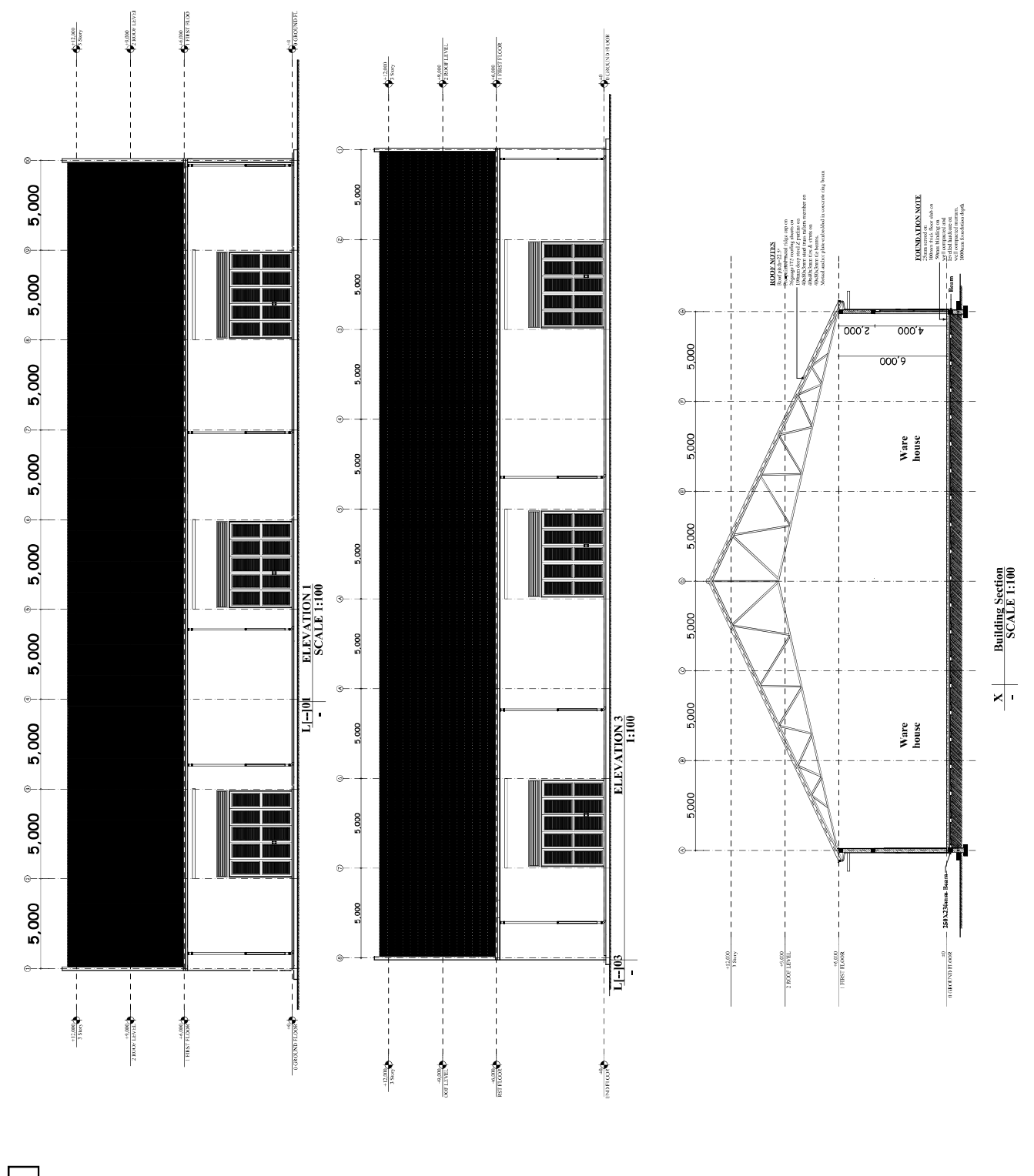
Project	WAREHOUSE PROJECT IN THE AREA OF BULAMBULI IN THE REPUBLIC OF UGANDA
Client	
By	
Checked	
Work Stage	Working drawings (Draft)
Drawing No.	Ground floor and Elevations (Wire rose)
CONSULTANTS	
Structural Engineers	
Mechanical and Electrical Engineers	
Scale	
Revised By	
Checked	

Sanyu Consultants Inc.

Bulambuli Plans

DRAFT

NO	NOTES
1.	All dimensions to be checked in situ, with dimensions to be allowed for access to cables and inspection.
2.	All walls to be 200mm thick to be rendered with hoop reinforcement in accordance with SANS 10400-1.
3.	All reinforced concrete work to be in accordance with SANS 10400-1 and as per the drawings.
4.	All primary work to be in accordance with SANS 10400-1 and as per the drawings.
5.	When steel passes under existing overhead area, pipe to be cut on a minimum of 100mm concrete.
6.	All waste pipes are to be placed in the recesses and the waste to be of 80mm diameter to be connected to main sewer.
7.	All windows and doors to be placed on ground floor to be as per the drawings.
8.	All doors to be 2000mm wide and 2000mm high to be placed in accordance with SANS 10400-1 and as per the drawings.
9.	All doors to be 2000mm wide and 2000mm high to be placed in accordance with SANS 10400-1 and as per the drawings.
10.	All internal plaster to be two coats and 12mm thick.
11.	All internal walls to be finished in grey, in every area to be finished to have a very fine finish, smooth and durable.
12.	Provide C1, 25 x 100 rebar down pipes and 150 x 100 C100 grates with transverse, when shown.
13.	All painting to be as per the drawings.
14.	Submit a report of 1000mm depth of the perimeter of building.
15.	Submit a report of 1000mm depth of the perimeter of building.
16.	Submit a report of 1000mm depth of the perimeter of building.
17.	Submit a report of 1000mm depth of the perimeter of building.
18.	Submit a report of 1000mm depth of the perimeter of building.
19.	Submit a report of 1000mm depth of the perimeter of building.
20.	Submit a report of 1000mm depth of the perimeter of building.
21.	Submit a report of 1000mm depth of the perimeter of building.
22.	Submit a report of 1000mm depth of the perimeter of building.
23.	Submit a report of 1000mm depth of the perimeter of building.
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NO	date	description	REVISED

THE PREPARATORY SURVEY ON THE PROJECT FOR A RADIATION SYSTEM IN THE REPUBLIC OF UGANDA

Client:

Drawn by:

Checked by:

Working drawings (Draft)

Section and Elevation (Work copy)

CONSULTANTS

Sanyu Consultants Inc.

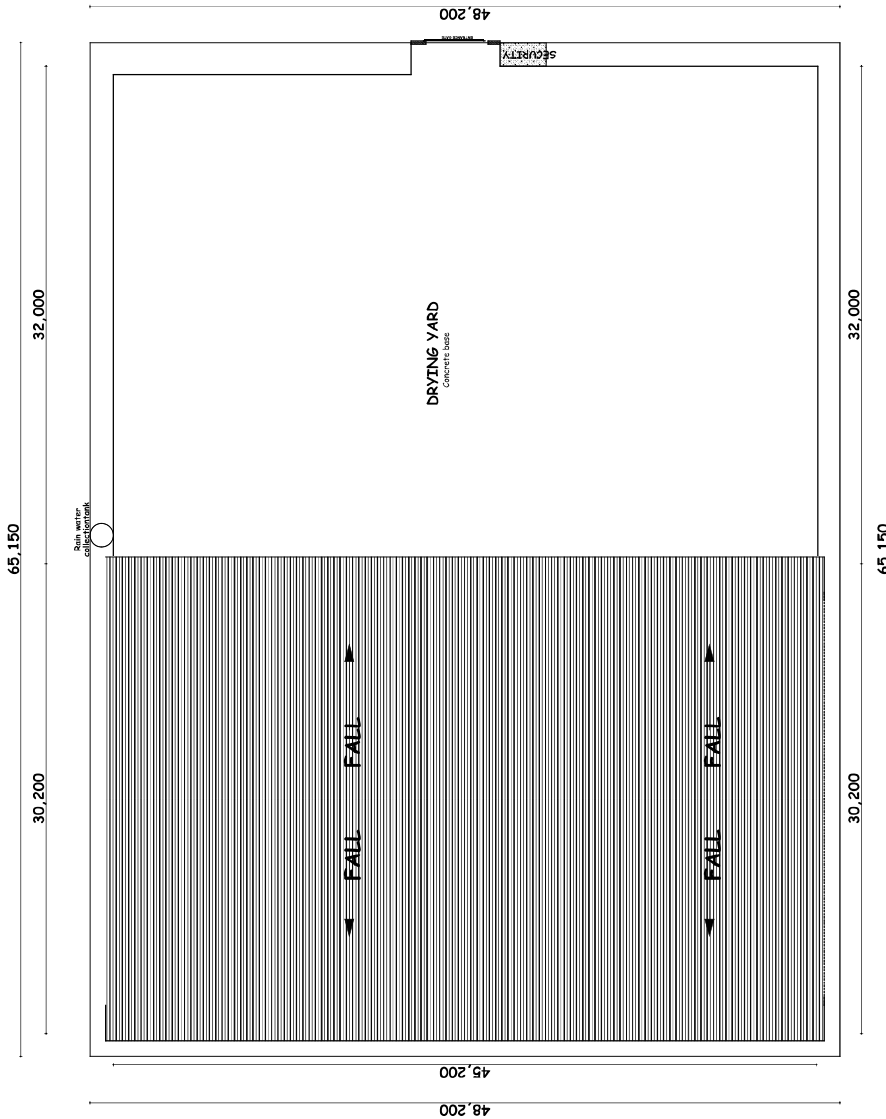
Structural Engineers

Mechanical and Electrical Engineers

Date: Scale: Drawing No: Checked:

Bulambuli Plans

DRAFT



SITE LAYOUT PLAN
SCALE 1:150

0. -

NO

date

description

1. All dimensions to be indicated in millimetres unless otherwise stated.
2. All walls shall be 100mm thick & be reinforced with hoop reinforcement.
3. All concrete work to be in accordance with MOP-4 and as specified.
4. Where slabs are used under building or driveway area, they shall be cast on a prepared 100mm concrete base.
5. All waste pipes and soil pipes are to be recessed and the joints to be sealed with a suitable sealant.
6. All windows and doors are to be in accordance with MOP-4 and as specified.
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date

description

REVISIONS

NO

date

description

THE PREPARATORY SURVEY ON THE PROJECT FOR A HIGH RISE BUILDING IN THE REPUBLIC OF UGANDA

Client

Working drawings (Draft)

Genecol layout

CONSULTANTS

Sanyu Consultants Inc.

Structural Engineers

Mechanical and Electrical Engineers

Scale

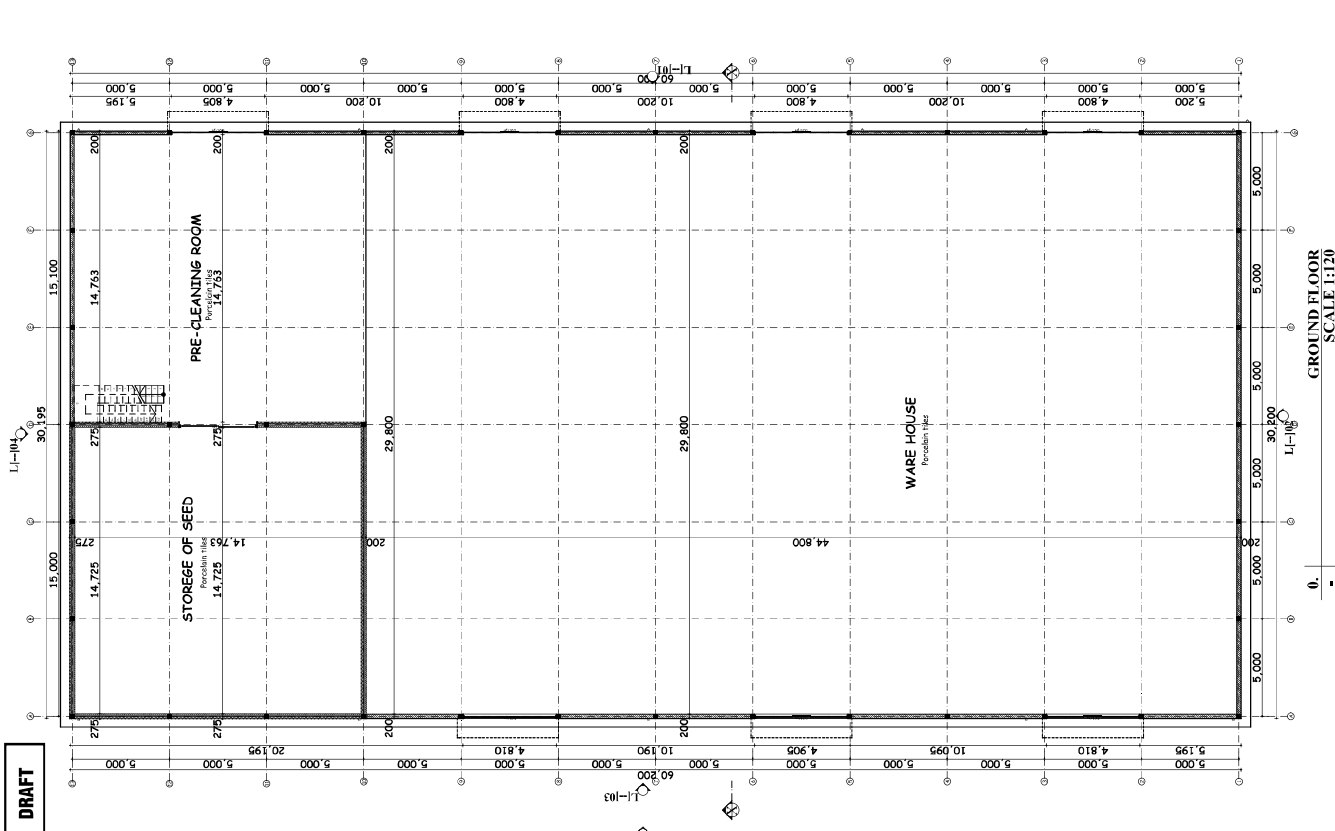
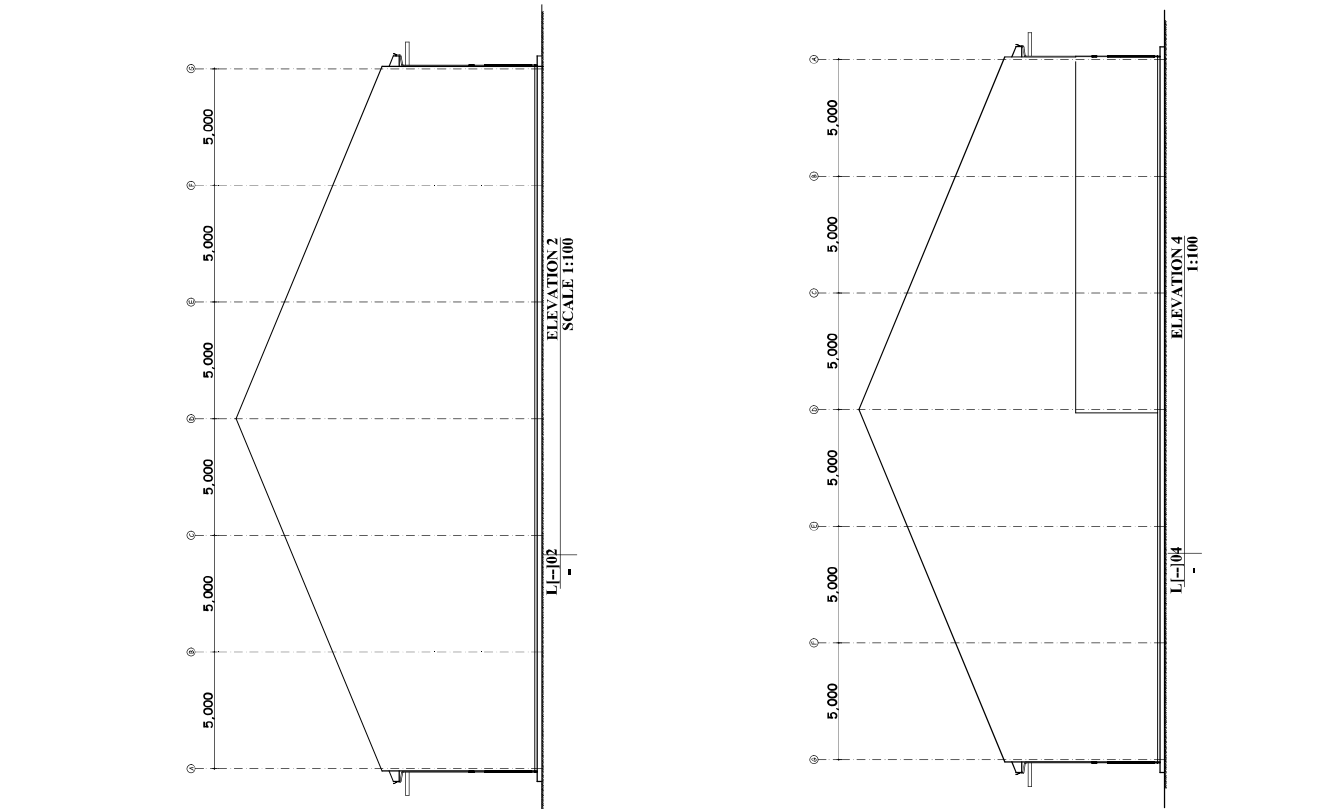
Checked

Drawn

Checked

Kween Plans

NO	NOTES
1.	All dimensions to be indicated in millimeters. All dimensions shall be rounded up to the next millimeter.
2.	All walls to be 200mm thick to be rendered with hoop reinforcement.
3.	All concrete to be cast in accordance with SANS 1045 and approved by the Engineer.
4.	All primary works to be in accordance with SANS 1045 and approved by the Engineer.
5.	When drains pass under, cutting or through any slab, they shall be cast in a recess in the slab.
6.	All waste pipes and pipes are to be recessed and the waste to be of 40mm size.
7.	All windows and doors to be set down on ground floor to have height of 2100mm above ground level.
8.	All doors to be set down and moulded & to be set with a threshold of 10mm above ground level.
9.	Site cases and fully doors to be set with 10mm threshold.
10.	All internal plaster to be two coats and 12mm thick.
11.	All internal walls to be finished with 12mm thick plaster to have a finish of 10mm above and 10mm below.
12.	Provide C1, 25 x 100 rebar down pipes and 125 x 100 C100 grates with translucent, woven mesh.
13.	All painting to be 3 coats.
14.	Submit a report of 1000mm above the perimeter of building.
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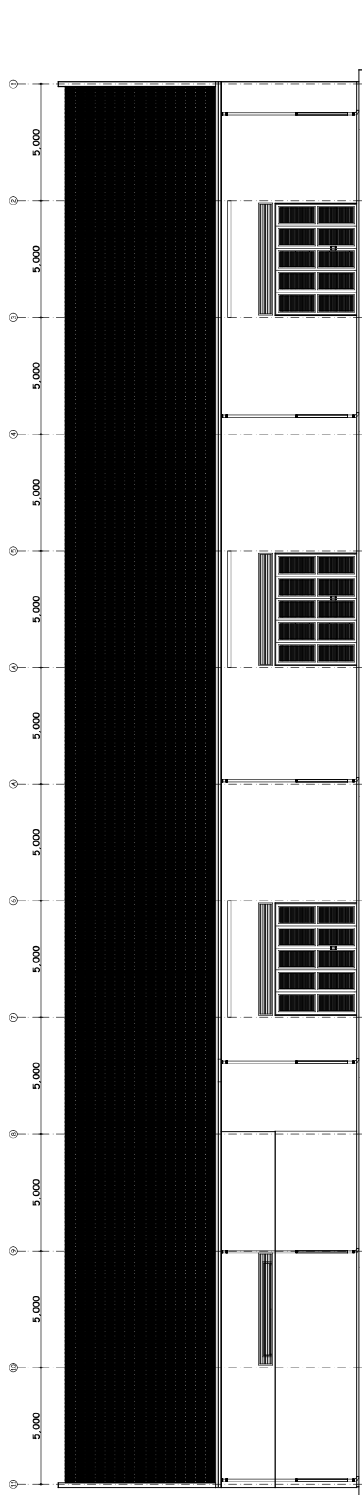


Kween Plans

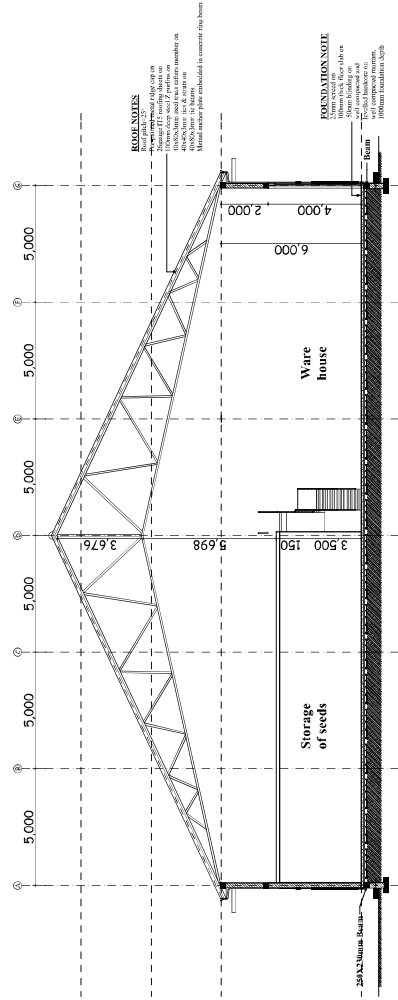
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ELEVATION 1
SCALE 1:100



ELEVATION 3
SCALE 1:100



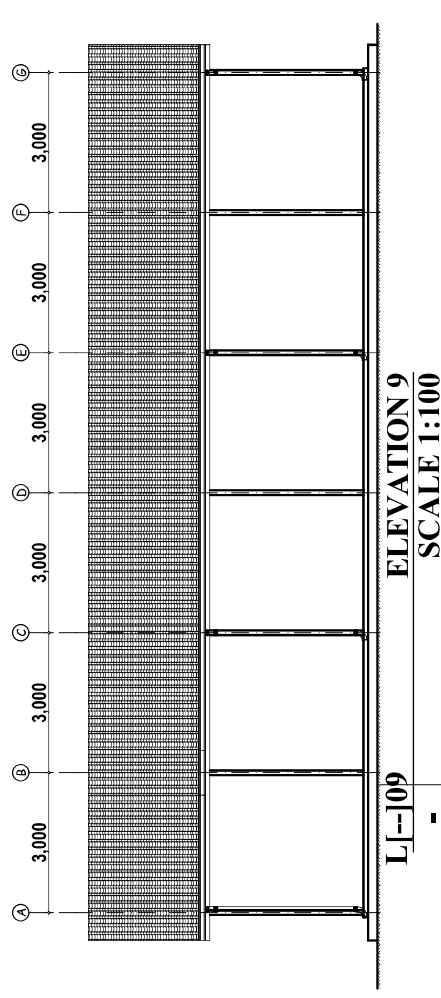
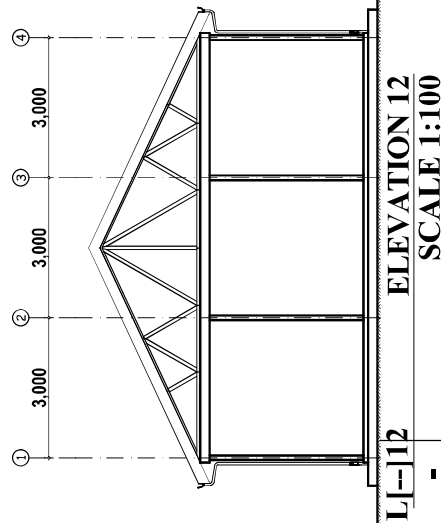
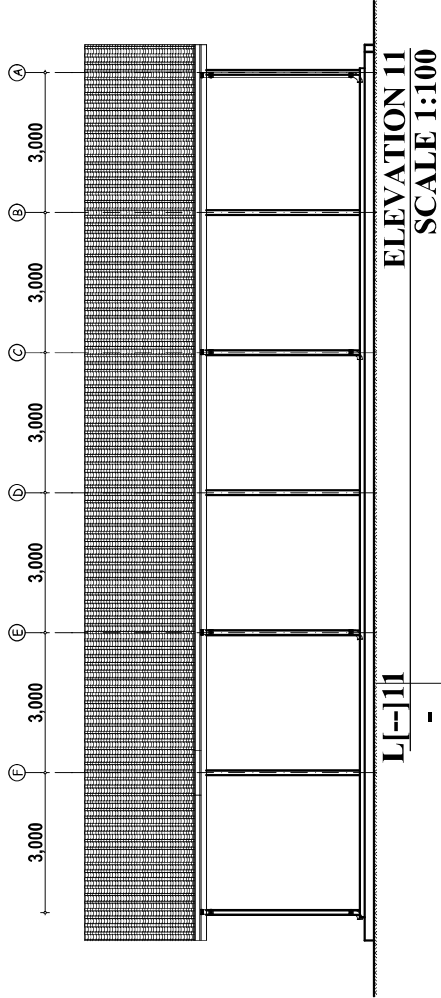
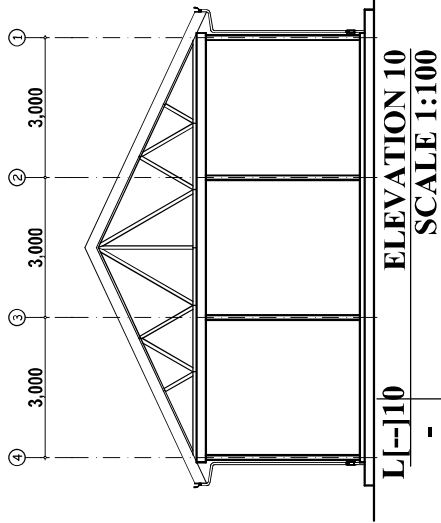
Building Section
SCALE 1:100

NO	date	description	REVISIONS

PROJECT	THE PREPARATORY SURVEY OF THE PROJECT FOR A RAIN WATER COLLECTION SYSTEM IN THE REPUBLIC OF GUINEA	
CLIENT		
BY		
DATE		
WORK SHEET	Working drawings (Draft)	
DRAWING NO.	Section and Elevation (Ware house)	
CONSULTANTS		
 Sanyu Consultants Inc.		
Structural Engineers		
Mechanical and Electrical Engineers		
Date	Scale	Checked

1. All dimensions to be indicated in (m), unless otherwise specified.
2. All walls to be 200mm thick to be rendered with hoop reinforcement.
3. All reinforced concrete work to be in accordance with relevant Engineering Codes.
4. All primary works to be in accordance with IGC/AFES and applicable codes.
5. Where slabs are under existing or existing area, they are to be cast on a prepared 100mm concrete.
6. All waste pipes are to be placed in a trench and the trench to be filled with concrete.
7. All windows and doors are to be set in accordance with relevant Engineering Codes.
8. All doors are to be set in accordance with relevant Engineering Codes.
9. All doors are to be set in accordance with relevant Engineering Codes.
10. All masonry work to be set in accordance with IGC/AFES and applicable codes.
11. All masonry work to be set in accordance with IGC/AFES and applicable codes.
12. Provision of 125 x 100 mm concrete down pipes and 125 x 100 mm concrete gutters with transoms, where shown.
13. All painting to be in accordance with relevant Engineering Codes.
14. Submit a report of 1000mm direct the perimeter of building.
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DRAFT



NO

NOTES

1. All dimensions to be checked on site, within dimensions to be obtained in preference to building instructions.
2. All walls less than 200mm thick to be reinforced with hoop iron at every alternate course.
3. All reinforced concrete work to be in accordance with structural design & detail.
4. All masonry to be in accordance with MJ21 rules and regulations.
5. Where rain pipes under eaves or driveway areas, pipes to be of cast iron or enclosed in 100mm concrete.
6. All waste pipes and soil pipes are to be in ducts and the ducts to have all floor joists accessible from ducts.
7. All windows and external glazed doors on ground floor to have double glazing to prevent heat loss.
8. All door frames to be treated & sealed to be all with concrete to prevent moisture to build under door concrete to all doors.
9. Staircases to be fully open to be self-closing and 1/2 hour fire resistant.
10. All internal doors to be two core steel foot finished.
11. All windows with building are driveway and parking to have heavy duty fire light covers and double glazing.
12. Porous G.L. 125 x 100 mm water down pipes and 125 x 100 G.L. down pipes with traps etc. where shown.
13. All painting to be 3 coats.
14. Slaten steps of 1000mm dia to be perimeter of building.
15. Sample fittings, materials, to be purchased & approved by the contractor.
16. Windows to have 150mm dia. cast in situ concrete lintels & base fixed to masonry & be 50mm.
17. Steel reinforcement frames & panels to be partner with a grade of 40mm.
18. The lifting equipment to be provided one (1) by the contractor to be used where shown on plan.
19. The contractor shall be responsible for the design of the building. Any discrepancy shall be reported immediately to the architect. Any discrepancy shall be reported immediately to the architect. The contractor shall be responsible for the design of the building. Any discrepancy shall be reported immediately to the architect.

NO

DESCRIPTION

NO	DATE	DESCRIPTION

Project: THE PREPARATION SURVEY ON THE PROJECT FOR A HIGH RISE BUILDING SYSTEM IN THE TERRACE OF QUANTA

Client: Sanyu Consultants Inc.

Working drawings (Draft)

System: Elevator (Garage)

CONSULTANTS

Structural Engineers

Mechanical and Electrical Engineers

Date:	Scale:	Drawn By:

DRAFT

NO NOTES

1. All dimensions to be checked on site, within dimensions to be allowed in preference to smaller dimensions.
2. All walls less than 225mm thick to be reinforced with hoops in every alternate course.
3. All reinforced concrete work to be in accordance with structural drawings & details.
4. All masonry work to be in accordance with MCA rules and regulations.
5. Where steel passes under building or driveway area, plates to be cast into or embedded in concrete.
6. All waste pipes and soil pipes are to be in ducts and the ducts to have all floor levels necessarily from outside.
7. All windows and external glazed doors on ground floor to be double glazed to correct cost.
8. All door frames to be treated & sealed to suit with appropriate sealant to prevent moisture to build under door space on all doors.
9. Steel cases and heavy doors to be self-aligning and 1/2 inch fire resistant.
10. All internal doors to be two case steel foot finished.
11. All windows with building area driveway and parking to have heavy duty air light covers and double glazing.
12. Porcelain G.L. 125 x 100 mm water stop plates and 125 x 100 G.L. cover plates with brackets etc. where shown.
13. All painting to be 3 coats.
14. Slatish strips of 100mm thick to be perimeter of building.
15. Sample fittings, materials, etc. to be presented & approved by the contractor prior to use.
16. All windows to have PVC, with fire retardant concrete window frames & fire resistant window shutters.
17. Steel reinforcement frames & supports to be in place with a cover of 40mm.
18. The lifting equipment to be provided one installed by building the contractor where shown on plans.
19. The structural drawings shall be correct in accordance with the specifications and drawings of the Engineer, B.E. of Queensland & Technical Specifications. Any discrepancy shall be reported immediately to the architect. The contractor shall be responsible for any variations in drawings to be provided in writing, as for any omissions or omissions here shall be the responsibility for works handled by other nominated contractors or contractors.

NO date description

FIGURE

THE ARCHITECT'S OFFICE IS THE ENGINEER FOR ALL MECHANICAL SYSTEMS IN THE MUNICIPAL OF MANA

Client

Val

Client Signature

Working drawings (Draft)

Sheet No. Ground floor plan & section (total)

CONSULTANTS



Structural Engineers

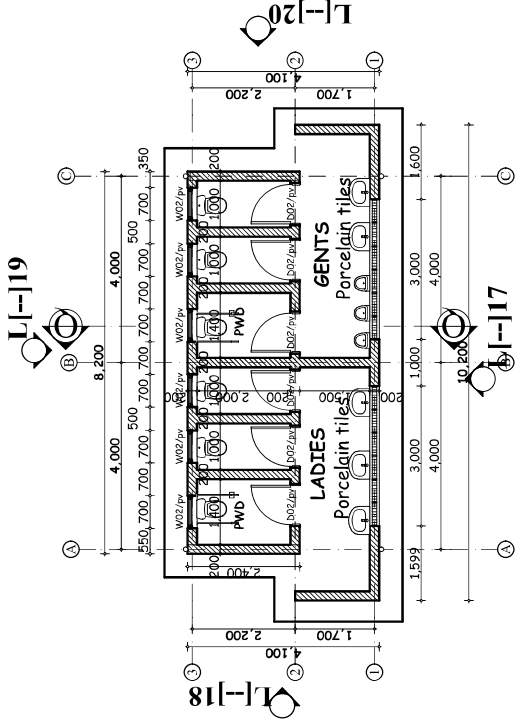
Mechanical and Electrical Engineers

Date

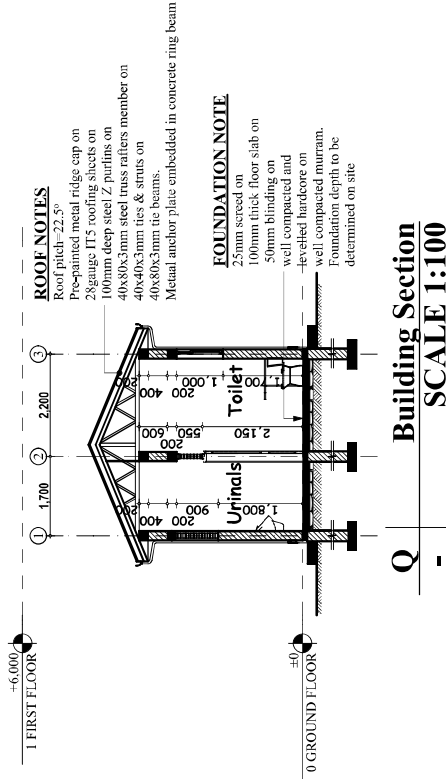
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Issued by

Checked



GROUND FLOOR
SCALE 1:100



ROOF NOTES

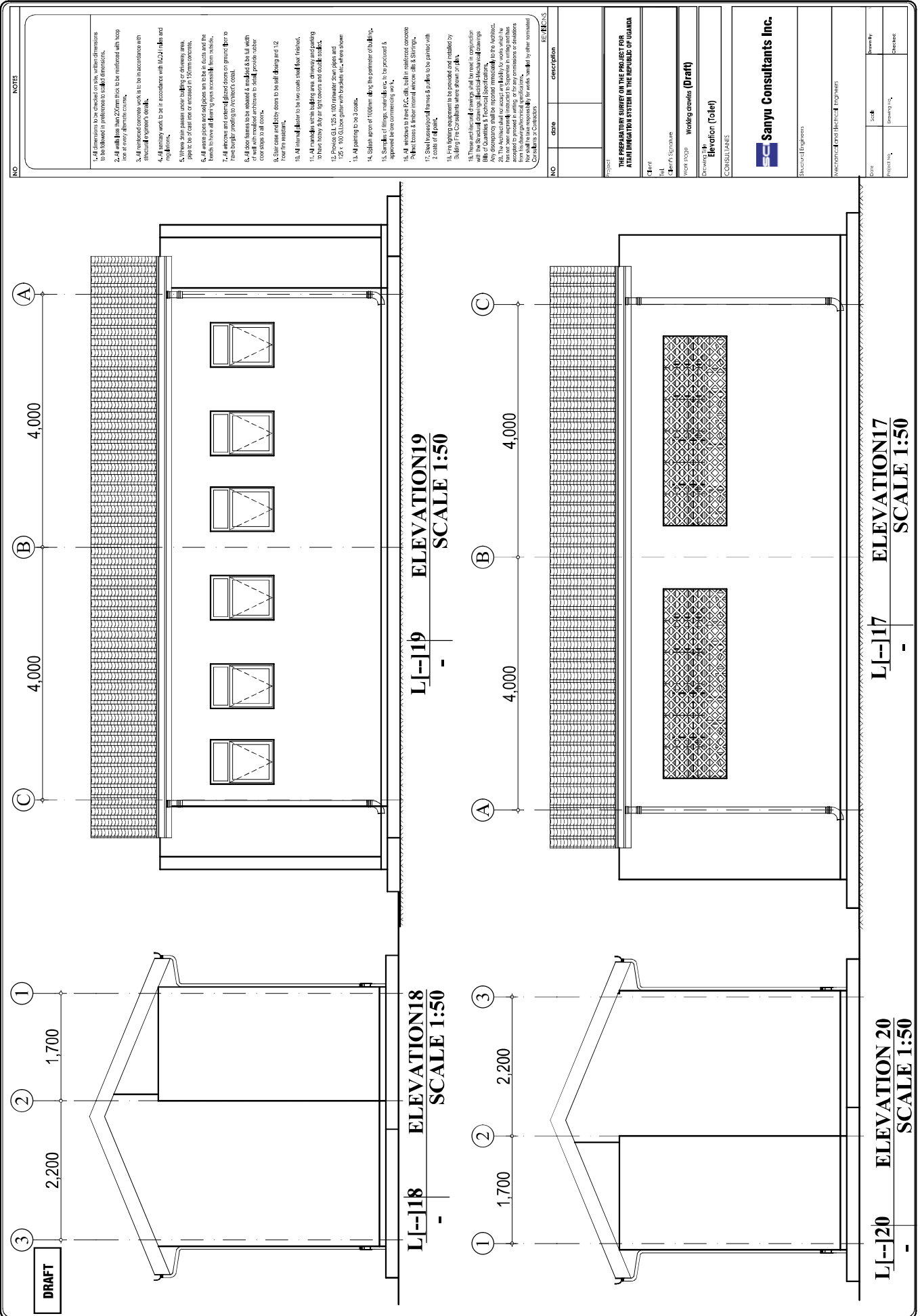
- Roof pitch- 22.5°
- Pre-painted metal ridge cap on
- 28 gauge IT5 roofing sheets on
- 100mm deep steel Z purlins on
- 40x80x3mm steel truss rafters member on
- 40x80x3mm ties & struts on
- 40x80x3mm tie beams.
- Metal anchor plate embedded in concrete ring beam

FOUNDATION NOTE

- 25mm screed on
- 100mm thick floor slab on
- 50mm blinding on
- well compacted and
- leveled hardcore on
- well compacted murrum.
- Foundation depth to be
- determined on site

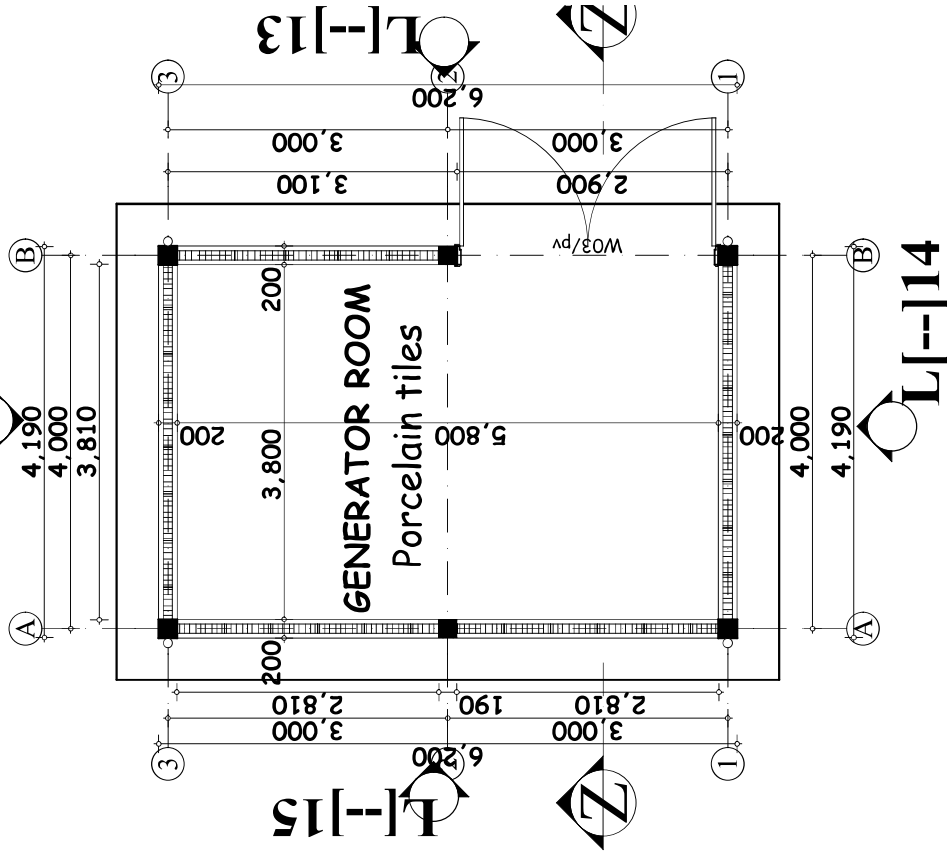
Building Section
SCALE 1:100

Kween Plans



DRAFT

L1--16



ROOF NOTES

- 1. Roof pitch—25°
- 2. Pre-painted metal ridge cap on 28 gauge T15 roofing sheets on 100mm deep steel Z purlins on 40x80x3mm steel truss rafters member on 40x80x3mm ties & struts on 40x80x3mm tie beams.
- 3. Metal anchor plate embedded in concrete ring beam

FOUNDATION NOTE

- 1. 25mm screed on 100mm thick floor slab on 50mm blinding on well compacted and levelled hardcore on well compacted murrum.
- 2. Foundation depth to be determined on site

Building Section
SCALE 1:100

NO	DATE	DESCRIPTION	REVISIONS

Project: THE PREPARATION SUMMIT OF THE PROJECT FOR A REHABILITATION SYSTEM IN THE TOWN OF QUNDA
 Client:
 Title:
 Client Signature:
 Working drawings (Draft)
 Drawing No:
 Ground floor plan & section (Generator room)
 CONSULTANTS
 Structural Engineers
 Mechanical and Electrical Engineers
 Date:
 Scale:
 Prepared by:
 Checked by:
 Drawn by:
 Checked by:

Sanyu Consultants Inc.

Kween Plans

LJ-13 ELEVATION 13
SCALE 1:50

LJ-14 ELEVATION 14
SCALE 1:50

LJ-15 ELEVATION 15
SCALE 1:50

LJ-16 ELEVATION 16
SCALE 1:50

DRAFT

NOTES

1. All dimensions to be checked on-site, within dimensions to be allowed in preference to factory dimensions.
2. All walls less than 225mm thick to be reinforced with hoop iron in every alternate course.
3. All reinforced concrete work to be in accordance with structural drawings.
4. All primary work to be in accordance with MJCA rules and regulations.
5. Where steel passes under roofing or driveway area, place it on a cast bed or encased in 75mm concrete.
6. All waste pipes and soil pipes are to be in situ and the levels to show all floor levels in accordance with notes.
7. All windows and external glazed doors on ground floor to be double glazed to correct cost.
8. All door frames to be treated & finished to be in with concrete to all doors.
9. Steel mesh in fly doors to be self-closing and 1/2 inch from wall.
10. All internal doors to be in one steel box finish.
11. All windows within building are driveway and parking to have heavy duty or light covers and double locks.
12. Provide G.L. 125 x 100 mm water door plates and 125 x 100 G.L. door plates with handles etc. where shown.
13. All painting to be 3 coats.
14. Slightly open of 100mm. All to be perimeter of building.
15. Sample fittings, materials, to be provided & approved by the contractor.
16. All windows to meet IFC, with self-closing devices and fire doors & fire rated doors and fittings.
17. Steel reinforcement frames & cables to be in place with a cover of 40mm.
18. The lifting equipment to be provided one (1) by the contractor.
19. The contractor shall provide a list of all materials to be used in the project and shall be approved by the contractor.
20. Any discrepancy shall be reported immediately to the architect.
21. The contractor shall be responsible for the project and shall be held responsible for any omissions or omissions.
22. The contractor shall be held responsible for any omissions or omissions.

REFERENCES

NO	date	description

PROJECT

THE KWEEN BUILDING ON THE WEST FOR THE BRANCH SYSTEM IN THE REPUBLIC OF UGANDA

Client

Client Name

Working drawings (Draft)

Working drawings (Generator room)

CONSULTANTS

Structural Engineers

Mechanical and Electrical Engineers

Sanyu Consultants Inc.

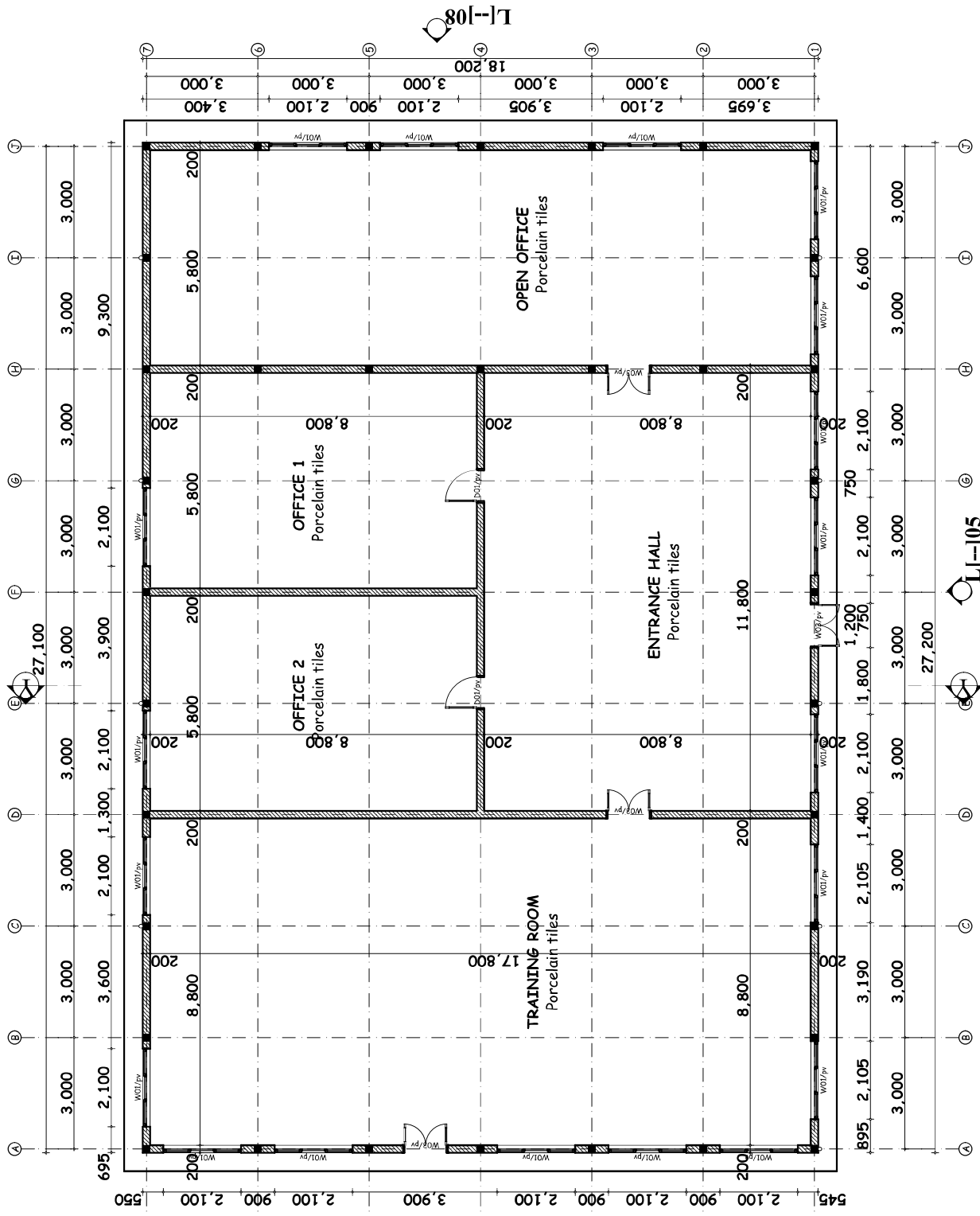
Structural Engineers

Mechanical and Electrical Engineers

Date	Scale	Drawn by

Kween Plans

NO	NOTES	NO	description
1.	All dimensions to be checked on site, within 5% tolerance to be allowed in preference to other measurements.		
2.	All walls to be constructed with 200mm thick masonry with 100mm insulation.		
3.	All reinforced concrete work to be in accordance with relevant standards and specifications.		
4.	All primary work to be in accordance with NCC tables and specifications.		
5.	Where steel reinforcement is used, all bars to be of the correct grade and diameter.		
6.	All window and door frames to be in accordance with the relevant standards and specifications.		
7.	All windows and external glazed doors on ground floor to be in accordance with relevant standards and specifications.		
8.	All door frames to be in accordance with relevant standards and specifications.		
9.	All floor finishes to be in accordance with relevant standards and specifications.		
10.	All internal doors to be in accordance with relevant standards and specifications.		
11.	All external doors to be in accordance with relevant standards and specifications.		
12.	All external doors to be in accordance with relevant standards and specifications.		
13.	All external doors to be in accordance with relevant standards and specifications.		
14.	All external doors to be in accordance with relevant standards and specifications.		
15.	All external doors to be in accordance with relevant standards and specifications.		
16.	All external doors to be in accordance with relevant standards and specifications.		
17.	All external doors to be in accordance with relevant standards and specifications.		
18.	All external doors to be in accordance with relevant standards and specifications.		
19.	All external doors to be in accordance with relevant standards and specifications.		
20.	All external doors to be in accordance with relevant standards and specifications.		



DRAFT

L1-105
GROUND FLOOR
SCALE 1:100

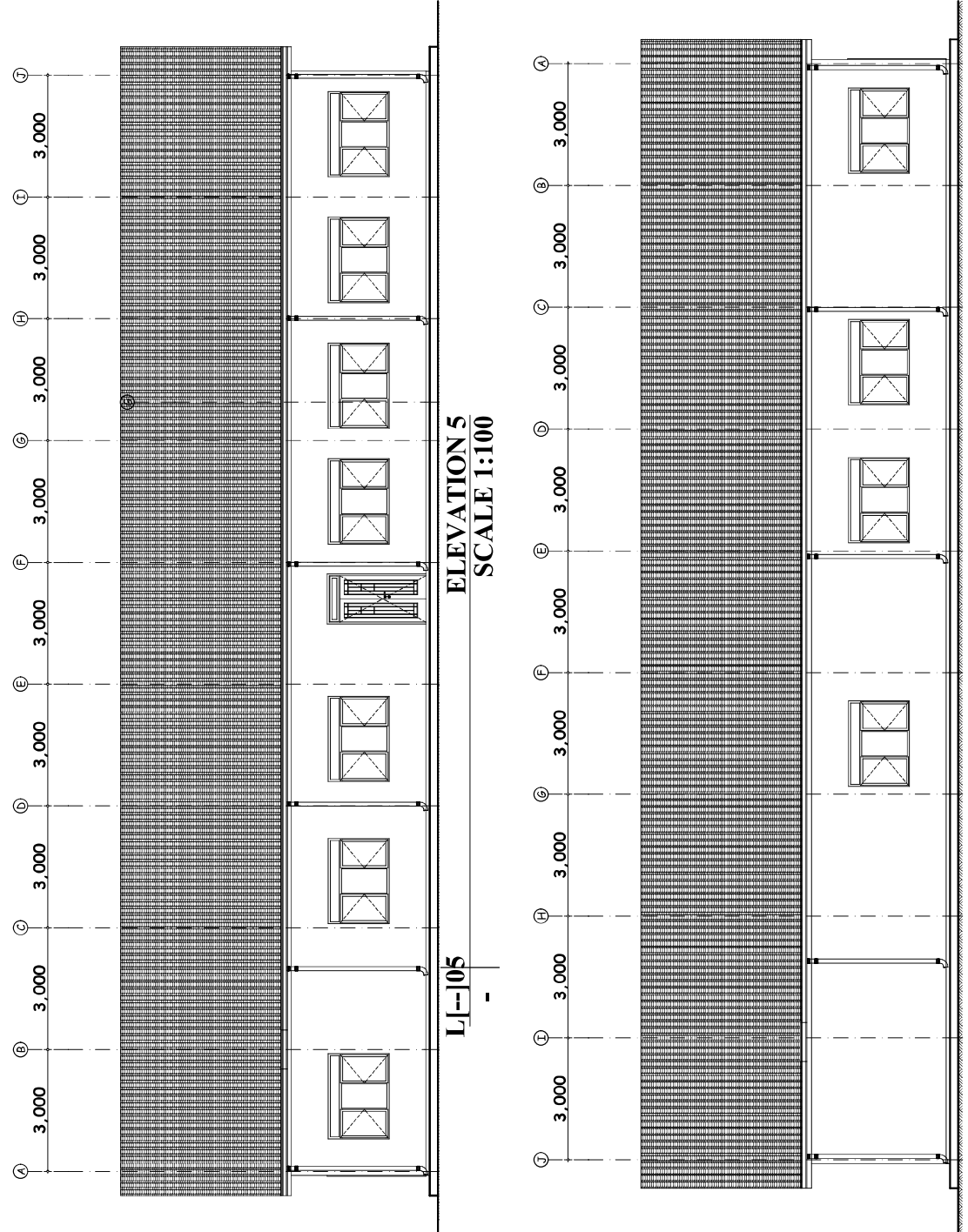
0. -

Sanyu Consultants Inc.
Structural Engineers
Mechanical and Electrical Engineers

Date	Scale	Drawn By	Checked

Kween Plans

DRAFT



ELEVATION 5
SCALE 1:100

NO

NOTES

1. All dimensions to be checked against, within dimensions to be allowed in preference to other dimensions.
2. All walls less than 200mm thick to be reinforced with hoop reinforcement.
3. All reinforced concrete work to be in accordance with structural design & detail.
4. All primary work to be in accordance with MJ21 rules and regulations.
5. Where steel passes under building or driveway area, pipe to be cast into or encased in 100mm concrete.
6. All waste pipes and soil pipes are to be in ducts and the ducts to have all their joints sealed with sealant.
7. All windows and external glazed doors on ground floor to be double glazed to restrict heat loss.
8. All door frames to be treated & sealed to be all with weatherstripping to ensure to seal, provide outer door case to all doors.
9. Steel reinforcement to be self-draining and 1/2 inch from surface.
10. All internal doors to be two case steel door finish.
11. All windows with building are driveway and parking to have heavy duty light covers and double glazing.
12. Provide G.L. 125 x 100 minimum door plates and 125 x 100 G.L. door plates with handles etc. where shown.
13. All painting to be 3 coats.
14. Spacing of 100mm @ 1/2 the perimeter of building.
15. Sample of fittings, materials, to be provided & approved by client before work.
16. All windows to have 100mm x 100mm x 100mm concrete lintels & 100mm x 100mm x 100mm concrete sills.
17. Steel reinforcement frames & pillars to be painted with 3 coats of 40mm.
18. The primary equipment to be provided one installed by building the contractor where shown on plan.
19. The structural drawings shall be in accordance with the Building Code of Queensland & Technical Specifications. Any discrepancy shall be reported immediately to the architect.
20. The contractor shall be responsible for obtaining all necessary permits and approvals from the relevant authorities in writing before commencing work. The contractor shall be responsible for any variations or omissions from the drawings & specifications.

NO

description

Project

THE PREPARATORY SURVEY OF THE PROJECT FOR A NEW BUILDING SYSTEM IN THE TERRITORY OF QUAERLAND

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Client

Structural Engineers

Mechanical and Electrical Engineers

Date

Scale

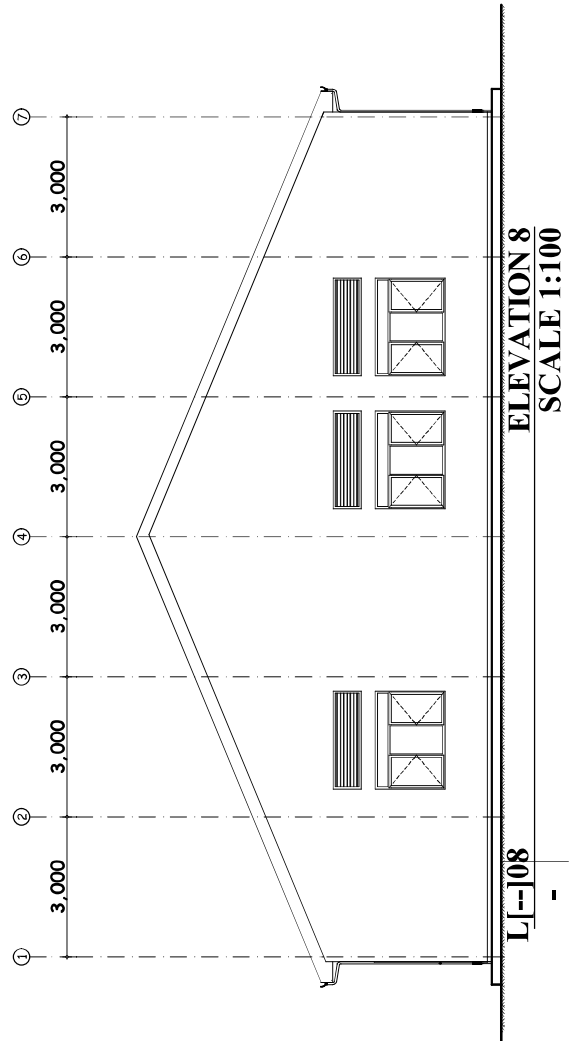
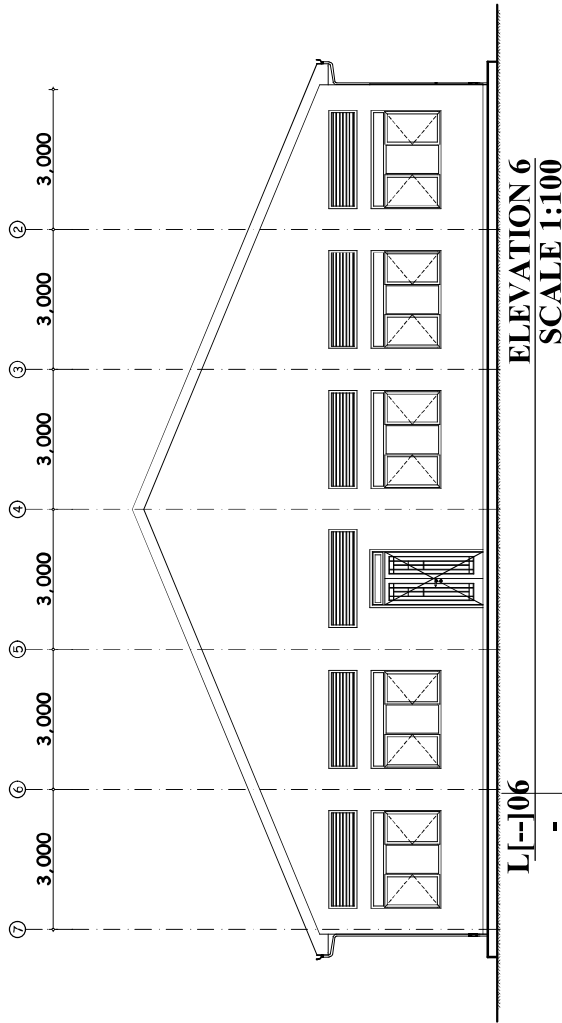
Drawn by

Checked by

SC Sanyu Consultants Inc.

Kween Plans

DRAFT



NO

DATE

DESCRIPTION

- NOTES**
- All dimensions to be checked on-site, within dimensions to be obtained in preference to building information.
 - All walls less than 200mm thick to be reinforced with hoop iron in every alternate course.
 - All reinforced concrete work to be in accordance with structural drawings & general contract.
 - All primary work to be in accordance with MJCA rules and regulations.
 - Where rain pipes under building or driveway area, pipes to be of cast iron or enclosed in 100mm concrete.
 - All waste pipes and soil pipes are to be in ducts and the ducts to have all floor to type necessary from outside.
 - All windows and external glazed doors on ground floor to have double glazing to correct cost.
 - All door frames to be reinforced & sealed to be full with 25mm concrete to provide access to all doors.
 - Structural steelwork doors to be self-closing and 1/2 hour fire resistant.
 - All internal doors to be low cost steel door finish.
 - All windows with building area driveway and parking to have heavy duty fly screens and double glazing.
 - Provide G.I. 125 x 100 mm water down pipes and 125 x 100 G.I. down pipes with traps etc. where shown.
 - All painting to be 3 coats.
 - Specify type of 100mm dia. for perimeter of building.
 - Specify all fittings, materials etc. to be purchased & approved by the engineering firm.
 - Where to meet T.C. with other trades or concrete to be placed & finished within 24 hours of setting.
 - Steel reinforcement frames & cables to be in place with 2 coats of 40mm.
 - The lifting equipment to be provided one (1) table by 300kg for the building work shown on this.
 - The structural drawings shall be issued in accordance with the Engineering Council of New Zealand Engineering Council of Queensland & Technical Specifications. Any discrepancy shall be reported immediately to the architect. The contractor shall be responsible for any omissions or omissions in the drawings. The contractor shall be responsible for any omissions or omissions in the drawings. The contractor shall be responsible for any omissions or omissions in the drawings.

PROJECT
THE PROVISION SUPPLY OF THE PROJECT FOR
A NEW BUILDING SYSTEM IN THE STATE OF QUEENSLAND

CLIENT
Name: Sanyu Consultants
Address: Sanyu Consultants (Draft)
Elevators (Office & training m)
CONSULTANTS

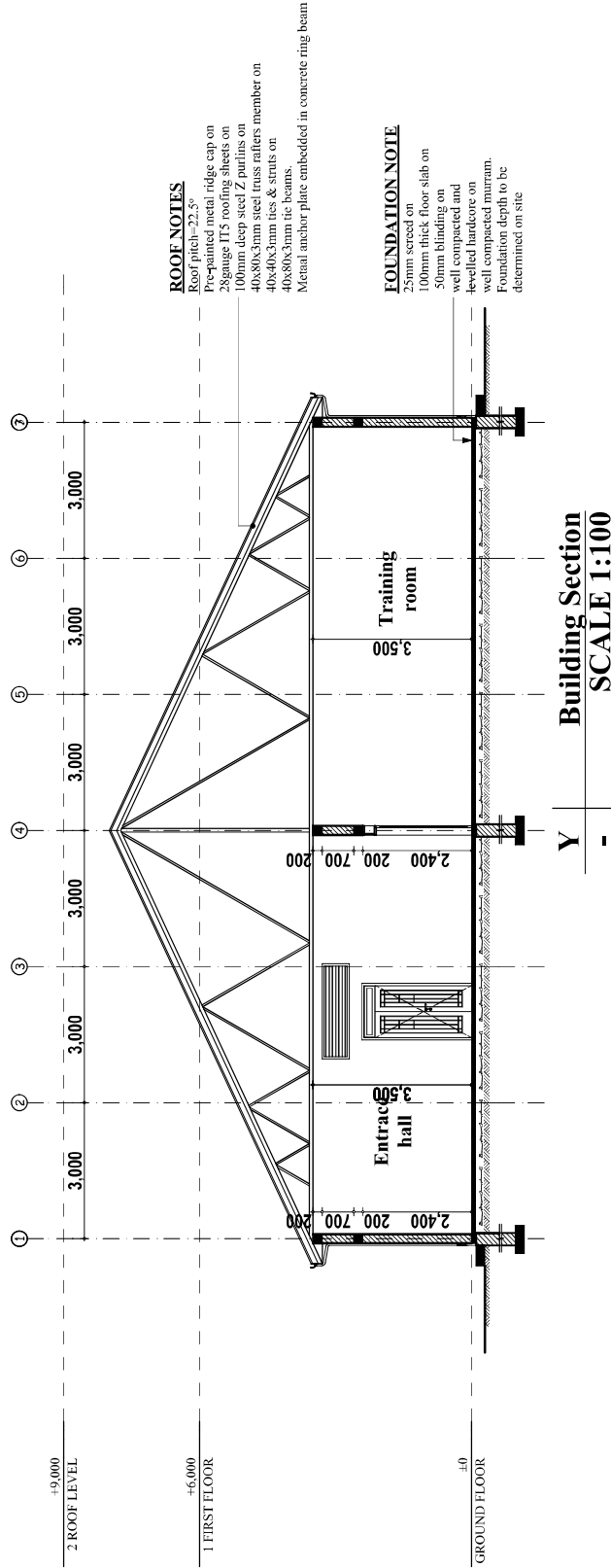
WORK SHOP
Working drawings (Draft)

DESIGNED BY
Sanyu Consultants Inc.

STRUCTURAL ENGINEERS
Mechanical and Electrical Engineers

Date: Set #:
Revised: Issued by: Checked:

DRAFT



ROOF NOTES

- 1. Pre-painted metal ridge cap on 28 gauge IT5 roofing sheets on 100mm deep steel Z purlins on 40x80x3mm steel truss rafters member on 40x80x3mm ties & struts on 40x80x3mm tie beams.
- 2. Metal anchor plate embedded in concrete ring beam

FOUNDATION NOTE

- 1. 25mm screed on 100mm thick floor slab on well compacted and levelled hardcore on well compacted murrum.
- 2. Foundation depth to be determined on site

NO	NOTES	REF. REV'S
	<ol style="list-style-type: none"> 1. All dimensions to be checked on site, within dimensions to be obtained in preference to building instructions. 2. All walls less than 200mm thick to be reinforced with hoop iron in every alternate course. 3. All reinforced concrete work to be in accordance with standard 4 figure 1 code book. 4. All primary work to be in accordance with NCC rules and regulations. 5. Where steel passes under building or driveway area, plate to be of cast iron or encased in 150mm concrete. 6. All waste pipes and soil pipes are to be in ducts and the ducts to have all bearing types necessary from outside. 7. All windows and external glazed doors on ground floor to have double glazing to protect cost. 8. All door frames to be reinforced & embedded in full with concrete to be in accordance with NCC provide color coat base to all doors. 9. Steel cases for entry doors to be self closing and 1/2 hour fire resistant. 10. All internal doors to be two case steel door finish. 11. All windows with building area driveway and parking to have heavy duty fly or fly covers and double sashes. 12. 125 x 100 G.U. floor plate with brackets etc. where shown 13. All painting to be 3 coats. 14. Slight slope of 1:100mm. 40 by the perimeter of building. 15. Sample of fittings materials etc. to be prepared & approved before commencing work. 16. All windows to have PVC with built in double glazing concrete frames & frame internal window and fittings. 17. Steel reinforcement for ties & purlins to be pinned with 2 coats of 40mm. 18. The lifting equipment to be provided one (1) rated by building the contractor where shown on plan. 19. The structural drawings shall be done in accordance with the Australian Standards and Engineering Code of Practice & Technical Specifications. Any discrepancy shall be reported immediately to the architect. 20. The contractor shall be responsible for obtaining all necessary permits and approvals from the relevant authorities in writing before commencing work on site. 21. The contractor shall be responsible for any emissions or discharges from the site. 22. The contractor shall be responsible for any noise or vibration from the site. 23. The contractor shall be responsible for any traffic or access to the site. 24. The contractor shall be responsible for any safety or health issues on the site. 25. The contractor shall be responsible for any environmental issues on the site. 26. The contractor shall be responsible for any cultural or heritage issues on the site. 27. The contractor shall be responsible for any archaeological issues on the site. 28. The contractor shall be responsible for any geotechnical issues on the site. 29. The contractor shall be responsible for any hydrological issues on the site. 30. The contractor shall be responsible for any meteorological issues on the site. 31. The contractor shall be responsible for any astronomical issues on the site. 32. The contractor shall be responsible for any geographical issues on the site. 33. The contractor shall be responsible for any topographical issues on the site. 34. The contractor shall be responsible for any hydrographic issues on the site. 35. The contractor shall be responsible for any oceanographic issues on the site. 36. The contractor shall be responsible for any limnological issues on the site. 37. The contractor shall be responsible for any biogeographical issues on the site. 38. The contractor shall be responsible for any environmental management issues on the site. 39. The contractor shall be responsible for any environmental impact assessment issues on the site. 40. The contractor shall be responsible for any environmental monitoring issues on the site. 41. The contractor shall be responsible for any environmental reporting issues on the site. 42. The contractor shall be responsible for any environmental compliance issues on the site. 43. The contractor shall be responsible for any environmental liability issues on the site. 44. The contractor shall be responsible for any environmental risk management issues on the site. 45. The contractor shall be responsible for any environmental due diligence issues on the site. 46. The contractor shall be responsible for any environmental audit issues on the site. 47. The contractor shall be responsible for any environmental certification issues on the site. 48. The contractor shall be responsible for any environmental accreditation issues on the site. 49. The contractor shall be responsible for any environmental membership issues on the site. 50. The contractor shall be responsible for any environmental contribution issues on the site. 51. The contractor shall be responsible for any environmental partnership issues on the site. 52. The contractor shall be responsible for any environmental collaboration issues on the site. 53. The contractor shall be responsible for any environmental cooperation issues on the site. 54. The contractor shall be responsible for any environmental support issues on the site. 55. The contractor shall be responsible for any environmental assistance issues on the site. 56. The contractor shall be responsible for any environmental advice issues on the site. 57. The contractor shall be responsible for any environmental guidance issues on the site. 58. The contractor shall be responsible for any environmental information issues on the site. 59. The contractor shall be responsible for any environmental communication issues on the site. 60. The contractor shall be responsible for any environmental education issues on the site. 61. The contractor shall be responsible for any environmental awareness issues on the site. 62. The contractor shall be responsible for any environmental training issues on the site. 63. The contractor shall be responsible for any environmental development issues on the site. 64. The contractor shall be responsible for any environmental improvement issues on the site. 65. The contractor shall be responsible for any environmental protection issues on the site. 66. The contractor shall be responsible for any environmental conservation issues on the site. 67. The contractor shall be responsible for any environmental preservation issues on the site. 68. The contractor shall be responsible for any environmental restoration issues on the site. 69. The contractor shall be responsible for any environmental rehabilitation issues on the site. 70. The contractor shall be responsible for any environmental remediation issues on the site. 71. The contractor shall be responsible for any environmental mitigation issues on the site. 72. The contractor shall be responsible for any environmental offset issues on the site. 73. The contractor shall be responsible for any environmental compensation issues on the site. 74. The contractor shall be responsible for any environmental reparation issues on the site. 75. The contractor shall be responsible for any environmental restitution issues on the site. 76. The contractor shall be responsible for any environmental satisfaction issues on the site. 77. The contractor shall be responsible for any environmental fulfillment issues on the site. 78. The contractor shall be responsible for any environmental realization issues on the site. 79. The contractor shall be responsible for any environmental achievement issues on the site. 80. The contractor shall be responsible for any environmental success issues on the site. 81. The contractor shall be responsible for any environmental accomplishment issues on the site. 82. The contractor shall be responsible for any environmental attainment issues on the site. 83. The contractor shall be responsible for any environmental aspiration issues on the site. 84. The contractor shall be responsible for any environmental ambition issues on the site. 85. The contractor shall be responsible for any environmental desire issues on the site. 86. The contractor shall be responsible for any environmental wish issues on the site. 87. The contractor shall be responsible for any environmental want issues on the site. 88. The contractor shall be responsible for any environmental need issues on the site. 89. The contractor shall be responsible for any environmental requirement issues on the site. 90. The contractor shall be responsible for any environmental necessity issues on the site. 91. The contractor shall be responsible for any environmental obligation issues on the site. 92. The contractor shall be responsible for any environmental duty issues on the site. 93. The contractor shall be responsible for any environmental responsibility issues on the site. 94. The contractor shall be responsible for any environmental accountability issues on the site. 95. The contractor shall be responsible for any environmental answerability issues on the site. 96. The contractor shall be responsible for any environmental liability issues on the site. 97. The contractor shall be responsible for any environmental responsibility issues on the site. 98. The contractor shall be responsible for any environmental accountability issues on the site. 99. The contractor shall be responsible for any environmental answerability issues on the site. 100. The contractor shall be responsible for any environmental liability issues on the site. 	

Project: **THE PREPARATORY SURVEY OF THE PROJECT FOR A TRAINING ROOM SYSTEM IN THE REPUBLIC OF QATAR.**

Client: **Qatar**

Team: **Client / Separate**

Work Stage: **Working drawings (Draft)**

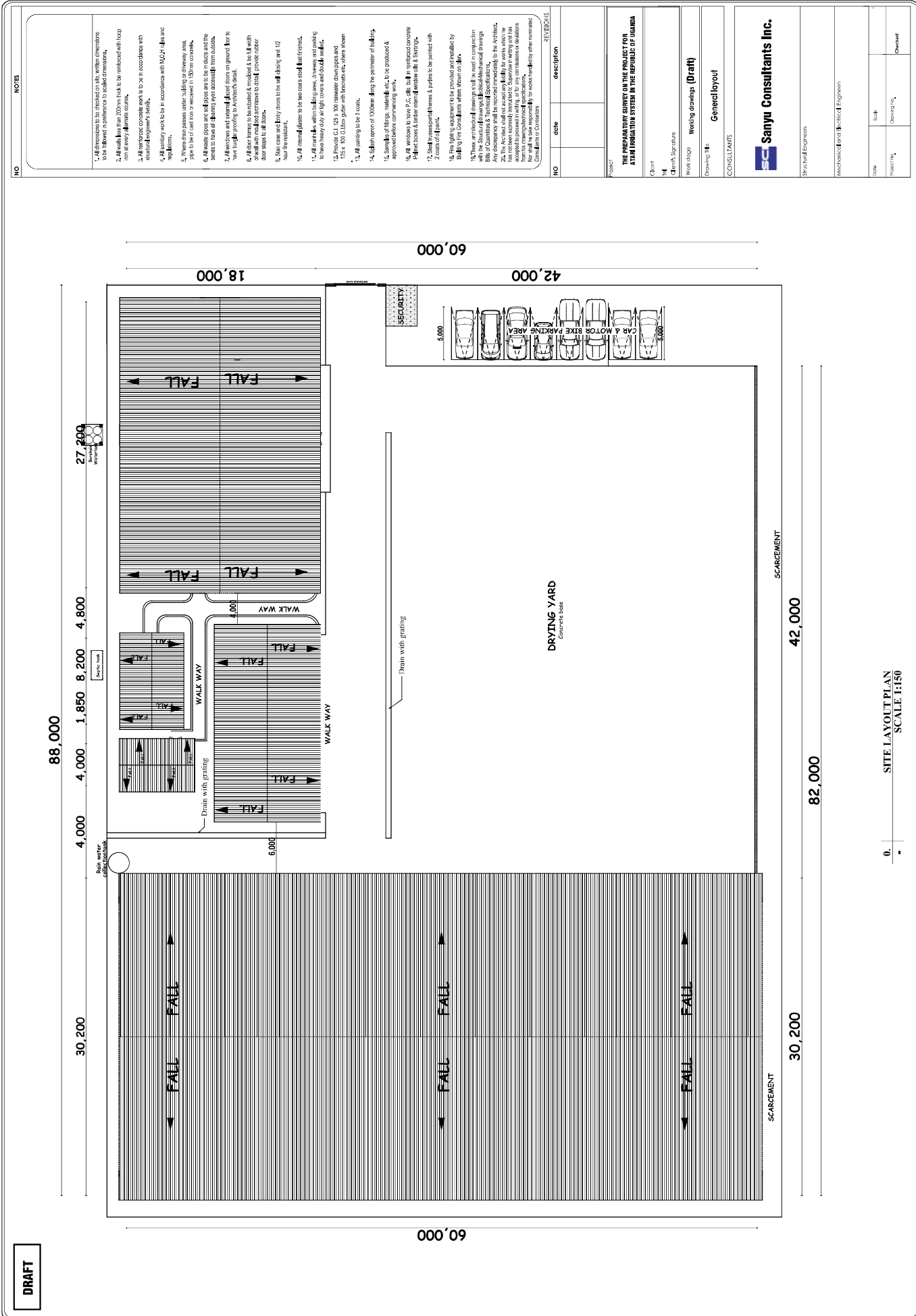
Drawing Title: **Section (Office & Training rm)**

CONSULTANTS: **Sanyu Consultants Inc.**

Structural Engineers: **Mechanical and Electrical Engineers**

Date	Scale	Drawn by	Checked

Kween Plans



DRAFT

NOTES

1. All dimensions to be checked on site with surveying instruments.
2. All walls to be finished with 125mm thick concrete with hoop reinforcement.
3. All structural concrete work to be in accordance with SABS 0102 - 2001.
4. All primary work to be in accordance with M.C.P. rules and regulations.
5. When doors pass under building or driveway area, pipe to be cast in concrete in 150mm concrete.
6. All waste pipes are cast in place and to be in accordance with SABS 0102 - 2001.
7. All windows and doors to be in accordance with SABS 0102 - 2001.
8. All doors to be in accordance with SABS 0102 - 2001.
9. All doors to be finished and installed in accordance with SABS 0102 - 2001.
10. All internal plaster to be two coats and finished.
11. All internal walls to be finished with 125mm thick concrete.
12. Internal G.I. 25 x 100 member down pipes and 125 x 100 G.I. cover grates with tandem nuts, down stream.
13. All painting to be 3 coats.
14. Submit report of 1000mm direct to the contractor of building.
15. Submit report of 1000mm direct to the contractor of building.
16. Submit report of 1000mm direct to the contractor of building.
17. Submit report of 1000mm direct to the contractor of building.
18. The plan is submitted for approval and shall be produced & stamped by the relevant authority.
19. The plan is submitted for approval and shall be produced & stamped by the relevant authority.
20. These architectural drawings shall be used in conjunction with the Bill of Materials & Technical Specifications.

NO.	DATE	DESCRIPTION	REVISIONS

Project: THE PREPARATORY SURVEY ON THE PROJECT FOR A RADIATION SYSTEM IN THE REPUBLIC OF JAMAICA

Client: SANYU CONSULTANTS

Design Stage: Working drawings (Draft)

Drawing No: Genecol layout

Consultants: Sanyu Consultants Inc.

Date: / /	Scale: 1:150	Checked: / /
Prepared by: / /	Drawn by: / /	Checked: / /

資料14. –設計条件

Standard Conditions for Structure Analysis

(1) Concrete

Standard cylinder is allowed to determine the compressive strength. Minimum 28days strength of reinforced concrete and plain concrete in Japanese code:

For plain concrete $F_{c_{cyl.}} = 18 \text{ N/mm}^2$
 For reinforced concrete $F_{c_{cyl.}} = 21 \text{ N/mm}^2$
 Note) cyl : Cylinder type

Table-1: Allowable stress of concrete

Items		Category of 28 days strength of concrete			Remarks
Reinforced concrete	1) 28days strength : σ_{ck} (N/mm ²)	18(cyl.)	21(cyl.)	24(cyl.)	Japanese code
	2) Allowable compressive stress due to bending : σ_{ca} (N/mm ²)	7	8	9	
Plain concrete	1) 28days strength : σ_{ck} (N/mm ²)	18(cyl.)	21(cyl.)	-	
	2) Allowable compressive stress : σ_{ca} (N/mm ²)	4.5	5	-	

(2) Shearing stress of concrete

Table-2: Shearing stress of concrete

Items		Category of 28 days strength of concrete			Remarks
28days strength : σ_{ck} (N/mm ²)		18(cyl.)	21(cyl.)	24(cyl.)	Japanese code
Shearing stress	1) burden by concrete only q_c (N/mm ²)	0.4	0.42	0.45	
	2) burden by concrete and diagonal tension bar : q_2 (N/mm ²)	1.8	1.9	2.0	

(3) Applied situation or structure of concrete

Table-3: Application Section of Cast in-situation for Concrete

Strength of 28 days design and concrete type	Applied situation and structure	Remarks
Plain concrete 【 $\sigma_{ck}=18 \text{ N/mm}^2(\text{cyl.})$ 】	<ul style="list-style-type: none"> • Bed concrete of structure foundation (leveling concrete) • Plain concrete structure, foundation concrete etc. • Situation of none moment on structure is usually acted. 	Japanese code
Reinforced concrete 【 $\sigma_{ck}=21 \text{ N/mm}^2(\text{cyl.})$ 】	<ul style="list-style-type: none"> • Main body of Regulator, Canal structure, flume, conduit, Siphon etc. • Situation of moment on structure is usually acted 	
Reinforced concrete 【 $\sigma_{ck}=24 \text{ N/mm}^2(\text{cyl.})$ 】	<ul style="list-style-type: none"> • Very important structures or elements 	

(4) Reinforced steel bar

Table-4: Allowable stress intensity for reinforcing bar

Items	Category of available steel bar (N/mm ²)	Remarks
	Steel 250	Grandees code
Up to and including 16	200	
Over 16 up to and including 20	185	
Over 20 up to and including 25	170	
Over 25 up to and including 32	160	
Over 32 up to and including 40	150	

Note) Source : TABLE 6304/10 TEST STRESS RANGES FOR NOMINAL BAR SIZES

(5) Unit Weight

Table-5: Concrete Unit Weight (Unit: kN/m³)

Material	Unit Weight	Japanese code
Plain Concrete γ_c	23	
Reinforcement Concrete γ'_c	24.5	
Water γ_w	9.8	

Table-6: Unit Weight of Back-filling Material

Back-filling Material	Unit Weight or Density (Unit: kN/m ³)			Shear strength		Japanese code
	Wet Density γ_t	Saturated Density γ_{sat}	Submerged Density γ_{sub}	Cohesion c (KN/m ²)	Internal friction degree ϕ°	
General Material (Excavated soil)	18	20	10	0	30	

(6) Load

Table-7: Wheel load

Truck type	Total weight	Occupied area	Load	Remarks
TL-25	245kN	9m×2.75m=24.75m ²	245÷24.75= 9.90 ≒ 10kN/m ²	Japanese code
TL-14	137kN	7m×2.75m=19.25m ²	137÷19.25= 7.11 ≒ 7kN/m ²	
TL-10	98kN	7m×2.75m=19.25m ²	98÷19.25= 5.09 ≒ 5kN/m ²	

Table-8: Crowd Load

type	Load	Remarks
Crowd Load type	3 KN/ m ²	Japanese code

(7) Stability Condition

a) Overturning

Japanese code

B: Length of base (m)

Normal time: eccentric distance----- $e \leq \frac{B}{6}$

Seismic time: eccentric distance----- $e \leq \frac{B}{3}$ B, if any necessary (: reference)

b) Sliding

Japanese code

Fs: Safety factor

B: Base width of retaining wall (m)

Normal time: sliding safety factor----- $F_s \geq 1.5$

Seismic time: sliding safety factor----- $F_s \geq 1.2$ if any necessary (: reference)

(8) Arrangement of Reinforcement and Reinforcement Coefficient

a) Unit Length

Grandees code

In principal deformed steel bar is used and diameter of reinforcement is as following table. Unit length of reinforcement is decided as 12 m.

Table-9 : Steel –bar

Cross sectional area (mm ²)	Mass per meter run (kg)	Cross sectional area (mm ²)
8	0.395	50.3
10	0.616	78.5
12	0.888	113.1
16	1.579	201.1
20	2.466	314.2
25	3.854	490.9
32	6.313	804.2

Note) Source : TABLE 6304/4 CROSS SECTIONAL AREA AND MASS OF CARBON STEEL BARS FOR THE REINFORCEMENT OF CONCRETE

(10) Cover over Reinforcement

Distance from center of main reinforcement to concrete surface is made as follow:

Table-10: Standard of Cover over Reinforcement

Construction condition	Diameter of main reinforcement	Cover distance	Japanese standard
Construction surface of form or leveling concrete		70mm	
Down side of base concrete at casting directly under ground (Footing, flume, culvert, siphon etc.)		100mm	
Over pile head (Case at penetration of pile head in base concrete greater or equal to 50 mm)		50mm	

(11) Length of Anchorage for Reinforcement Bars

Length of anchorage for reinforcement bars are decided as 30φ according to the follows' mentions. Length of anchorage for reinforcement bars is greater or equal to the length which calculated with the following formula.

$$L = \frac{\phi \cdot \sigma_{sa}}{4 \tau_{oa}}$$

L : Length of anchorage reinforcement bars (mm)

Toa : Allowable bond stress of concrete (1.5 N/mm²)

σsa : Allowable tensile stress of reinforcement (196 N/mm²)

φ : Diameter of reinforcement (mm)

Therefore, $L = 175 \sim 185 \times \phi / (4 \times 1.5) = 29.17 \sim 30.83 \phi \approx 30 \phi$

2. Seismic Coefficient

According to the ISI893(part I):2002, the targeted area is classified to Zone III, namely Z=0.16, and importance factor, I=1.5 (public building). As a result of assessment, the seismic coefficient should be less than 0.05. Therefore, the stress analysis in case of seismic load will not be impact on the critical analysis case, because the allowable capacity and safe factor of seismic conditions should be ease compared to the normal condition. Accordingly, the seismic conditions should not be included to the examination.

End

資料-15. 収集資料リスト

No.	Name of Materials	Publishing Organization/ Source	Form	Collected materials	Type				Categorization	Remarks
					Created materials by Experts	Created materials by JICA	Text book	Other		
1. Policy, National Strategy, Laws, etc.										
1-1	The Constitution of the Republic of Uganda, 1995	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-2	The National Environment Act, 1995	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-3	The Environmental Impact Assessment Regulation, 1998	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-4	The National Environment (Audit) Regulations, 2006	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-5	The National Environment (Conduct and Certification of Environmental Practitioners) Regulations, 2003.	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-6	The National Environment (Minimum Standards For Management Of Soil Quality) Regulations, 2001	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-7	The National Environment (Noise Standards And Control) Regulations, 2003	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-8	The National Environment (Standards for Discharge of Effluent into Water or on Land) Regulations, 1999	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-9	The National Environment (Waste Management) Regulations. Arrangement of Regulations	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-10	The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, 2000.	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-11	The AGRICULTURAL Chemicals (Control) Act, 2006.	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-12	The Control of Agricultural Chemicals (Registration and Control) Regulations.	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	
1-13	The Water Act, 1997	Government of Uganda	Electronic	1	-	-	-	-	JR・CR()・SC	

No.	Name of Materials	Publishing Organization/ Source	Form	Type				Categorization	Remarks
				Collected materials	Created materials by Experts	Created materials by JICA	Text book		
1-14	The Water (Waste Discharge) Regulations, 1998	Uganda Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-15	The Water (Water Resources) Regulations	Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-16	The Land Act, 1998 (amended in 2010)	Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-17	The Land Acquisition Act, 1965	Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-18	The National Development Plan (2015/16 - 2019/20)	Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-19	The Agricultural Sector Strategic Plan (2015/16 - 2019/20)	Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-20	National Agricultural Policy, 2013	MAAIF, Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-21	National Water Policy, 1999	Ministry of Water, Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
1-22	National Land Policy, 2013	Ministry of Lands, Housing, and Uren Development, Government of Uganda	Electronic	1	-	-	-	JR • CR() • SC	
2. Design code or Drawings									
2-1	General Specifications for Road and Bridge Works	Ministry of Works, Housing and Communications	Electronic	1	-	-	-	JR • CR() • SC	
3. Environmental and Social Considerations									
3-1	World Bank's Safeguard Policies	World Bank	Electronic	1	-	-	-	JR • CR() • SC	
3-2	The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 2009	WHO	Electronic	1	-	-	-	JR • CR() • SC	
3-3	Pest Management Plan	Agricultural Cluster Development Project	Electronic	1	-	-	-	JR • CR() • SC	
3-4	National Assessment Report on Policy and Legislation of Chemicals Management (May, 2010)	Strategic Approach to International Chemicals Management	Electronic	1	-	-	-	JR • CR() • SC	

No.	Name of Materials	Publishing Organization/ Source	Form	Type				Categorization	Remarks	
				Collected materials	Created materials by Experts	Created materials by JICA	Text book			Other
3-5	Rice Cultivation Handbook	Promotion of Rice Development Project, JICA	Electronic	-	-	1	-	-	JR • CR() • SC	
3-6	Register of Agricultural Chemicals Registered under Section 4 of the Agricultural Chemicals (Control) Act, 2006 as at 26 th June, 2018	MAAIF, Government of Uganda	Electronic	1	-	-	-	-	JR • CR() • SC	
3-7	Nationally Threatened Species for Uganda, 2016	WCS, etc.	Electronic	1	-	-	-	-	JR • CR() • SC	
3-8	Important Bird Areas in Uganda, Status and Trends 2009	Birdlife international, etc.	Electronic	1	-	-	-	-	JR • CR() • SC	
3-9	Ecological Baseline Surveys of Lake Bisina – Opet Wetlands System, Lake Mburo – Nakivali Wetlands System, 2009	IUCN, Nature Uganda, etc.	Electronic	1	-	-	-	-	JR • CR() • SC	
3-10	Project Completion Report, 2016	National Wetlands Management Project, JICA	Electronic	-	-	1	-	-	JR • CR() • SC	
3-11	Managing risks to improve farmers' livelihoods (March, 2017)	MAAIF, Government of Uganda	Electronic	1	-	-	-	-	JR • CR() • SC	
3-12	The state of Uganda's biodiversity 2017 (June, 2017)	Makerere University	Electronic	1	-	-	-	-	JR • CR() • SC	
3-13	Environmental Impact Assessment (EIA) Survey for the Project on Irrigation Scheme Development in Central and Eastern Uganda (PISD) Atari Final Report (Sep, 2016)	Air Water Earth (AWE) LTD	Electronic	1	-	-	-	-	JR • CR() • SC	
3-14	Integrated p e s t management framework (January, 2014)	Regional Pastoral Livelihoods Resilience Project	Electronic	1	-	-	-	-	JR • CR() • SC	
3-15	National biodiversity strategy and action plan II (2015-2015) (Oct, 2016)	NEMA	Electronic	1	-	-	-	-	JR • CR() • SC	