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Environmental Impact Statement (EIS)- Appendices

Pwalugu Multi-Purpose Dam Project (PMDP)

Volta River Authority (VRA)
GHANA

RESTRICTED

May 31, 2021

REPORT

P.015214-RP-02-Rev-03- Appendices

With the trusted expertise of COYNE ET BELLIER Ingénieurs Conseils

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PWALUGU MULTI-PURPOSE DAM PROJECT (PMDP)
Environmental Impact Statement (EIS)- Appendices

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APPENDIX B.LIST OF PLANT SPECIES POTENTIALLY PRESENT IN THE PWALUGU PROJECT STUDY AREA ACCORDING TO THE IUCN RED LIST (2020)

Kingdom	Phylum	Class	Genus	Species	English name	IUCN status
Plantae	Tracheophyta	Magnoliopsida	*Acacia*	*dominensis*		NE
Plantae	Tracheophyta	Magnoliopsida	*Acacia*	*dudgeoni*		LC
Plantae	Tracheophyta	Magnoliopsida	*Acacia*	*gourmaensis*		LC
Plantae	Tracheophyta	Magnoliopsida	*Acacia*	*polyacantha*		NE
Plantae	Tracheophyta	Magnoliopsida	*Acacia*	*sieberiana*		NE
Plantae	Tracheophyta	Magnoliopsida	*Acmella*	*uliginosa*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Adansonia*	*digitata*		NE
Plantae	Tracheophyta	Magnoliopsida	*Adenostemma*	*caffrum*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Aedesia*	*glabra*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Aeschynomene*	*indica*	Indian jointvetch	LC
Plantae	Tracheophyta	Magnoliopsida	*Aeschynomene*	*tambacoundensis*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Afzelia*	africana		VU
Plantae	Tracheophyta	Magnoliopsida	*Albizia*	*lebbeck*		NE
Plantae	Tracheophyta	Magnoliopsida	*Alternanthera*	*sessilis*	Sessile joyweed	LC
Plantae	Tracheophyta	Liliopsida	*Aneilema*	*mortonii*	-	DD
Plantae	Tracheophyta	Magnoliopsida	*Annona*	*senegalensis*		LC
Plantae	Tracheophyta	Magnoliopsida	*Anogeissus*	*leiocarpus*		NE
Plantae	Tracheophyta	Liliopsida	*Anubias*	*barteri*	-	LC
Plantae	Tracheophyta	Liliopsida	*Anubias*	*hastifolia*	-	LC
Plantae	Tracheophyta	Liliopsida	*Aponogeton*	*vallisnerioides*	-	LC
Plantae	Tracheophyta	Liliopsida	*Ascolepis*	*capensis*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Aspilia*	*helianthoides*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Azadirachta*	*indica*		LC
Plantae	Tracheophyta	Magnoliopsida	*Balanites*	*aegyptiaca*		LC
Plantae	Tracheophyta	Liliopsida	*Bolboschoenus*	*maritimus*	Sea club-rush	LC
Plantae	Tracheophyta	Magnoliopsida	*Bombax*	*costatum*		LC
Plantae	Tracheophyta	Liliopsida	*Borassus*	*aethiopium*		LC
Plantae	Tracheophyta	Magnoliopsida	*Bridelia*	*clerionera*		NE
Plantae	Tracheophyta	Magnoliopsida	*Brillantaisia*	*owariensis*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Buchnera*	*bowalensis*	-	DD
Plantae	Tracheophyta	Magnoliopsida	*Burkea*	*africana*		LC
Plantae	Tracheophyta	Liliopsida	*Caldesia*	*oligococca*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Cardiospermum*	*halicacibum*		NE
Plantae	Tracheophyta	Magnoliopsida	*Cassia*	*sieberiana*		LC
Plantae	Tracheophyta	Magnoliopsida	*Ceiba*	*pentandra*		LC
Plantae	Tracheophyta	Magnoliopsida	*Celtis*	*ikesutdea*		NE
Plantae	Tracheophyta	Magnoliopsida	*Celtis*	*integrifolia*		NE

Kingdom	Phylum	Class	Genus	Species	English name	IUCN status
Plantae	Tracheophyta	Magnoliopsida	*Ceratophyllum*	*muricatum*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cercestis*	*congensis*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Cochlospermum*	*planchonii*		NE
Plantae	Tracheophyta	Magnoliopsida	*Cochlospermum*	*tinctorium*		NE
Plantae	Tracheophyta	Magnoliopsida	*Combretum*	*collinum*		LC
Plantae	Tracheophyta	Magnoliopsida	*Combretum*	*fragrans*		NE
Plantae	Tracheophyta	Magnoliopsida	*Combretum*	*nigricans*		LC
Plantae	Tracheophyta	Magnoliopsida	*Combretum*	*paniculatum*		NE
Plantae	Tracheophyta	Magnoliopsida	*Crassocephalum*	*picridifolium*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Crataeva*	*adansonii*		NE
Plantae	Tracheophyta	Magnoliopsida	*Crossopteryx*	*febrifuga*		LC
Plantae	Tracheophyta	Liliopsida	*Culcasia*	*dinklagei*	-	LC
Plantae	Tracheophyta	Liliopsida	*Culcasia*	*scandens*	-	LC
Plantae	Tracheophyta	Liliopsida	*Culcasia*	*Striolata*	-	LC
Plantae	Tracheophyta	Liliopsida	*Culcasia*	*tenuifolia*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*alopecuroides*	Foxtail sedge	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*amabilis*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*articulatus*	Jointed flatsedge	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*baoulensis*	-	DD
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*compressus*	Poorland flatsedge	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*congensis*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*difformis*	Smallflower umbrella sedge	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*podocarpus*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*pulchellus*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*pustulatus*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*reduncus*	-	LC
Plantae	Tracheophyta	Liliopsida	*Cyperus*	*rotundus*	Nutgrass	LC
Plantae	Tracheophyta	Magnoliopsida	*Daniella*	*olivieri*		NE
Plantae	Tracheophyta	Magnoliopsida	*Detarium*	*microcarpum*		LC
Plantae	Tracheophyta	Magnoliopsida	*Dichrostachys*	*cineria*		LC
Plantae	Tracheophyta	Magnoliopsida	*Dicliptera*	*elliotii*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Diospyros*	*mepilathus*		NE
Plantae	Tracheophyta	Magnoliopsida	*Dopatrium*	*longidens*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Eclipta*	*prostrata*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Entada*	*africana*		LC
Plantae	Tracheophyta	Magnoliopsida	*Enydra*	*fluctans*	Buffalo spinach	LC
Plantae	Tracheophyta	Magnoliopsida	*Ficus*	*capreifolia*		LC
Plantae	Tracheophyta	Magnoliopsida	*Ficus*	*sycomorus*		LC
Plantae	Tracheophyta	Liliopsida	*Floscopa*	*axillaris*	-	DD
Plantae	Tracheophyta	Magnoliopsida	*Gardenia*	*aqualla*		NE
Plantae	Tracheophyta	Magnoliopsida	*Gardenia*	*erubescens*		NE
Plantae	Tracheophyta	Magnoliopsida	*Gardenia*	*ternifolia*		LC
Plantae	Tracheophyta	Magnoliopsida	*Gmelina*	*arborea*		LC

Kingdom	Phylum	Class	Genus	Species	English name	IUCN status
Plantae	Tracheophyta	Magnoliopsida	*Grangea*	*maderaspatana*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Grewia*	*carpinifolia*		NE
Plantae	Tracheophyta	Magnoliopsida	*Gymnema*	*sylvestre*		NE
Plantae	Tracheophyta	Magnoliopsida	*Haematostaphis*	*barteri*		NE
Plantae	Tracheophyta	Liliopsida	*Heteranthera*	*callifolia*	Mud plantain	LC
Plantae	Tracheophyta	Magnoliopsida	*Hexalobus*	*monopetalus*		LC
Plantae	Tracheophyta	Magnoliopsida	*Hexalobus*	*monopetalus*		LC
Plantae	Tracheophyta	Liliopsida	*Hydrocharis*	*chevalieri*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Hygrophila*	*borellii*	-	DD
Plantae	Tracheophyta	Magnoliopsida	*Hygrophila*	*laevis*	-	DD
Plantae	Tracheophyta	Magnoliopsida	*Hygrophila*	*senegalensis*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Inversodicraea*	*ledermannii*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Isoberlinia*	*doka*		LC
Plantae	Tracheophyta	Lycopodiopsida	*Isoetes*	*melanotheca*	-	DD
Plantae	Tracheophyta	Lycopodiopsida	*Isoetes*	*spinulospora*	-	DD
Plantae	Tracheophyta	Lycopodiopsida	*Isoetes*	*welwitschii*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Khaya*	*senegalensis*		VU
Plantae	Tracheophyta	Magnoliopsida	*Lannea*	*acida*		LC
Plantae	Tracheophyta	Magnoliopsida	*Lannea*	*microcarpa*		LC
Plantae	Tracheophyta	Liliopsida	*Lasimorpha*	*senegalensis*	Swamp arum	LC
Plantae	Tracheophyta	Magnoliopsida	*Letestuella*	*tisserantii*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Leucaena*	*glauca*		NE
Plantae	Tracheophyta	Liliopsida	*Limnophyton*	*obtusifolium*	Arrow head	LC
Plantae	Tracheophyta	Magnoliopsida	*Loeseneriella*	*africana*		NE
Plantae	Tracheophyta	Magnoliopsida	*Lonchocarpus*	*laxiflorus*		LC
Plantae	Tracheophyta	Magnoliopsida	*Lonchocarpus*	*sericeus*		LC
Plantae	Tracheophyta	Magnoliopsida	*Ludwigia*	*brenanii*	-	DD
Plantae	Tracheophyta	Magnoliopsida	*Luffa*	*aegyptiaca*		NE
Plantae	Tracheophyta	Polypodiopsida	*Marsilea*	*berhautii*	-	LC
Plantae	Tracheophyta	Polypodiopsida	*Marsilea*	*minuta*	Dwarf water clover	LC
Plantae	Tracheophyta	Magnoliopsida	*Maytenus*	*senegalensis*		NE
Plantae	Tracheophyta	Magnoliopsida	*Maytenus*	*senegalensis*		NE
Plantae	Tracheophyta	Magnoliopsida	*Mimosa*	*pigra*		NE
Plantae	Tracheophyta	Magnoliopsida	*Mitragyna*	*inermis*		NE
Plantae	Tracheophyta	Magnoliopsida	*Mitragyna*	*inermis*		NE
Plantae	Tracheophyta	Liliopsida	*Monochoria*	*brevipetiolata*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Monotes*	*kerstingii*		LC
Plantae	Tracheophyta	Liliopsida	*Najas*	*baldwinii*	-	DD
Plantae	Tracheophyta	Liliopsida	*Najas*	*graminea*	Ricefield waternymph	LC
Plantae	Tracheophyta	Liliopsida	*Najas*	*hagerupii*	-	DD
Plantae	Tracheophyta	Liliopsida	*Najas*	*marina*	Holly-leaved naiad	LC
Plantae	Tracheophyta	Liliopsida	*Najas*	*pectinata*	-	LC
Plantae	Tracheophyta	Liliopsida	*Najas*	*schweinfurthii*	-	LC

Kingdom	Phylum	Class	Genus	Species	English name	IUCN status
Plantae	Tracheophyta	Liliopsida	*Najas*	*testui*	-	LC
Plantae	Tracheophyta	Liliopsida	*Najas*	*welwitschii*	-	DD
Plantae	Tracheophyta	Magnoliopsida	*Nauclea*	*latifolia*		LC
Plantae	Tracheophyta	Magnoliopsida	*Nymphaea*	*micrantha*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Nymphoides*	*ezannoi*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Nymphoides*	*forbesiana*	-	LC
Plantae	Tracheophyta	Liliopsida	*Oryza*	*barthii*	-	LC
Plantae	Tracheophyta	Liliopsida	*Oryza*	*brachyantha*	-	DD
Plantae	Tracheophyta	Liliopsida	*Oryza*	*glaberrima*	-	LC
Plantae	Tracheophyta	Liliopsida	*Oryza*	*longistaminata*	Red rice	LC
Plantae	Tracheophyta	Liliopsida	*Oryza*	*schweinfurthiana*	-	DD
Plantae	Tracheophyta	Liliopsida	*Oryza*	*punctata*	Red rice	LC
Plantae	Tracheophyta	Magnoliopsida	*Ozoroa*	*insignis*		LC
Plantae	Tracheophyta	Magnoliopsida	*Parkia*	*biglobosa*		LC
Plantae	Tracheophyta	Magnoliopsida	*Passiflora*	*foetida*		NE
Plantae	Tracheophyta	Magnoliopsida	*Paullinia*	*pinnata*		NE
Plantae	Tracheophyta	Magnoliopsida	*Pericopsis*	*laxiflora*		LC
Plantae	Tracheophyta	Magnoliopsida	*Phaulopsis*	*imbricata*	-	LC
Plantae	Tracheophyta	Liliopsida	*Phragmites*	*karka*		LC
Plantae	Tracheophyta	Magnoliopsida	*Phyllanthus*	*reticulatus*		NE
Plantae	Tracheophyta	Magnoliopsida	*Physacanthus*	*nematosiphon*	-	NT
Plantae	Tracheophyta	Magnoliopsida	*Pileostegia*	*tormelia*		NE
Plantae	Tracheophyta	Magnoliopsida	*Piliostigma*	*reticulatum*		NE
Plantae	Tracheophyta	Magnoliopsida	*Piliostigma*	*thonningii*		NE
Plantae	Tracheophyta	Liliopsida	*Pistia*	*stratiotes*	Water lettuce	LC
Plantae	Tracheophyta	Liliopsida	*Potamogeton*	*nodosus*	Loddon pondweed	LC
Plantae	Tracheophyta	Liliopsida	*Potamogeton*	*octandrus*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Prosopis*	*africana*		LC
Plantae	Tracheophyta	Magnoliopsida	*Pseudocedrela*	*kochii*		LC
Plantae	Tracheophyta	Magnoliopsida	*Pteleopsis*	*suberosa*		LC
Plantae	Tracheophyta	Magnoliopsida	*Pterocarpus*	*erinaceus*		EN
Plantae	Tracheophyta	Magnoliopsida	*Pterocarpus*	*santalinoides*		LC
Plantae	Tracheophyta	Liliopsida	*Pycreus*	*mortonii*	-	LC
Plantae	Tracheophyta	Liliopsida	*Pycreus*	*nuerensis*	-	LC
Plantae	Tracheophyta	Liliopsida	*Ranalisma*	*humile*	-	LC
Plantae	Tracheophyta	Liliopsida	*Raphia*	*palma-pinus*	Raphia palm	NT
Plantae	Tracheophyta	Liliopsida	*Raphia*	*sudanica*	Raphia	NT
Plantae	Tracheophyta	Magnoliopsida	*Rhinacanthus*	*virens*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Ricinus*	*communis*		NE
Plantae	Tracheophyta	Magnoliopsida	*Ruellia*	*primuloides*	-	LC
Plantae	Tracheophyta	Liliopsida	*Sacciolepis*	*cymbiandra*	-	LC
Plantae	Tracheophyta	Liliopsida	*Sagittaria*	*guayanensis*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Saxicolella*	*flabellata*	-	DD

Kingdom	Phylum	Class	Genus	Species	English name	IUCN status
Plantae	Tracheophyta	Liliopsida	*Scleria*	*vogelii*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Securida*	*longipedunculata*		NE
Plantae	Tracheophyta	Magnoliopsida	*Securinega*	*virosa*		NE
Plantae	Tracheophyta	Magnoliopsida	*Sesbania*	*sesban*		LC
Plantae	Tracheophyta	Magnoliopsida	*Sphenoclea*	*dalzielii*	Wedgewort	DD
Plantae	Tracheophyta	Liliopsida	*Spirodela*	*polyrhiza*	Greater duckweed	LC
Plantae	Tracheophyta	Magnoliopsida	*Stenandrium*	*guineense*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Sterculia*	*setigera*		NE
Plantae	Tracheophyta	Magnoliopsida	*Stereospermum*	*kunthianum*		LC
Plantae	Tracheophyta	Magnoliopsida	*Strychnos*	*innocua*		LC
Plantae	Tracheophyta	Magnoliopsida	*Strychnos*	*spinosa*		NE
Plantae	Tracheophyta	Magnoliopsida	*Tamarindus*	*indica*		LC
Plantae	Tracheophyta	Magnoliopsida	*Tapinanthus*	*dodoneifolius*		NE
Plantae	Tracheophyta	Magnoliopsida	*Terminalia*	*avicennioides*		LC
Plantae	Tracheophyta	Magnoliopsida	*Terminalia*	*laxiflora*		LC
Plantae	Tracheophyta	Magnoliopsida	*Terminalia*	*macroptera*		LC
Plantae	Tracheophyta	Magnoliopsida	*Trapa*	*natans*	Water caltrop	LC
Plantae	Tracheophyta	Magnoliopsida	*Trichilia*	*emetica*		LC
Plantae	Tracheophyta	Liliopsida	*Typha*	*domingensis*	Southern cat-tail	LC
Plantae	Tracheophyta	Liliopsida	*Typha*	*elephantina*	-	LC
Plantae	Tracheophyta	Liliopsida	*Vallisneria*	*spiralis*	Tapegrass	LC
Plantae	Tracheophyta	Liliopsida	*Vetiveria*	*fulvibarbis*	-	LC
Plantae	Tracheophyta	Magnoliopsida	*Vitellaria*	*paradoxum*		VU
Plantae	Tracheophyta	Magnoliopsida	*Vitex*	*doniana*		LC
Plantae	Tracheophyta	Magnoliopsida	*Vitex*	*doniana*		LC
Plantae	Tracheophyta	Magnoliopsida	*Vitis*	*chrysocarpa*		NE
Plantae	Tracheophyta	Liliopsida	*Wolffia*	*arrhiza*	Rootless duckwess	LC
Plantae	Tracheophyta	Magnoliopsida	*Ximenia*	*americana*		LC
Plantae	Tracheophyta	Liliopsida	*Zannichellia*	*palustris*	Horned pondweed	LC
Plantae	Tracheophyta	Magnoliopsida	*Ziziphus*	*mucronata*		LC

APPENDIX C.LIST OF SPECIES POTENTIALLY PRESENT IN THE PWALUGU PROJECT STUDY AREA ACCORDING TO THE IUCN RED LIST

C.1. List of amphibian species potentially present in the Pwalugu project study area according to the IUCN red list (2020)

Kingdom	Phylum	Class	Order	Genus - species	IUCN status
Animalia	Chordata	Amphibia	Anura	*Afrixalus vittiger*	LC
Animalia	Chordata	Amphibia	Anura	*Afrixalus weidholzi*	LC
Animalia	Chordata	Amphibia	Anura	*Amnirana galamensis*	LC
Animalia	Chordata	Amphibia	Anura	*Hemisus marmoratus*	LC
Animalia	Chordata	Amphibia	Anura	*Hildebrandtia ornata*	LC
Animalia	Chordata	Amphibia	Anura	*Hoplobatrachus occipitalis*	LC
Animalia	Chordata	Amphibia	Anura	*Hyperolius nitidulus*	LC
Animalia	Chordata	Amphibia	Anura	*Kassina cassinoides*	LC
Animalia	Chordata	Amphibia	Anura	*Kassina fusca*	LC
Animalia	Chordata	Amphibia	Anura	*Kassina senegalensis*	LC
Animalia	Chordata	Amphibia	Anura	*Leptopelis bufonides*	LC
Animalia	Chordata	Amphibia	Anura	*Leptopelis viridis*	LC
Animalia	Chordata	Amphibia	Anura	*Phrynobatrachus francisci*	LC
Animalia	Chordata	Amphibia	Anura	*Phrynobatrachus latifrons*	LC
Animalia	Chordata	Amphibia	Anura	*Phrynobatrachus natalensis*	LC
Animalia	Chordata	Amphibia	Anura	*Phrynomantis microps*	LC
Animalia	Chordata	Amphibia	Anura	*Ptychadena bibroni*	LC
Animalia	Chordata	Amphibia	Anura	*Ptychadena oxyrhynchus*	LC
Animalia	Chordata	Amphibia	Anura	*Ptychadena pumilio*	LC
Animalia	Chordata	Amphibia	Anura	*Ptychadena schillukorum*	LC
Animalia	Chordata	Amphibia	Anura	*Ptychadena tellinii*	LC
Animalia	Chordata	Amphibia	Anura	*Ptychadena tournieri*	LC
Animalia	Chordata	Amphibia	Anura	*Ptychadena trinodis*	LC
Animalia	Chordata	Amphibia	Anura	*Sclerophrys maculata*	LC
Animalia	Chordata	Amphibia	Anura	*Sclerophrys pentoni*	LC
Animalia	Chordata	Amphibia	Anura	*Sclerophrys regularis*	LC
Animalia	Chordata	Amphibia	Anura	*Xenopus fischbergi*	LC

C.2. List of reptilian species potentially present in the Pwalugu project study area according to the IUCN red list (2020)

Kingdom	Phylum	Class	Order	Family	Genus - species	IUCN status	Ghanaian protection status
Animalia	Chordata	Reptilia	Squamata	Natricidae	*Afronatrix anoscopus*	LC	
Animalia	Chordata	Reptilia	Squamata	Atractaspididae	*Atractaspis dahomeyensis*	LC	
Animalia	Chordata	Reptilia	Squamata	Atractaspididae	*Atractaspis irregularis*	LC	
Animalia	Chordata	Reptilia	Squamata	Colubridae	*Bamanophis dorri*	LC	
Animalia	Chordata	Reptilia	Squamata	Scincidae	*Chalcides thierryi*	LC	
Animalia	Chordata	Reptilia	Squamata	Chamaeleonidae	*Chamaeleo africanus*	LC	
Animalia	Chordata	Reptilia	Squamata	Chamaeleonidae	*Chamaeleo gracilis*	LC	
Animalia	Chordata	Reptilia	Squamata	Chamaeleonidae	*Chamaeleo senegalensis*	LC	
Animalia	Chordata	Reptilia	Testudines	Trionychidae	*Cyclanorbis elegans*	CR	
Animalia	Chordata	Reptilia	Testudines	Trionychidae	*Cyclanorbis senegalensis*	VU	
Animalia	Chordata	Reptilia	Squamata	Lamprophiidae	*Gonionotophis grantii*	LC	
Animalia	Chordata	Reptilia	Squamata	Eublepharidae	*Hemitheconyx caudicinctus*	LC	
Animalia	Chordata	Reptilia	Squamata	Lamprophiidae	*Lycophidion semicinctum*	LC	
Animalia	Chordata	Reptilia	Squamata	Leptotyphlopidae	*Myriopholis boueti*	LC	
Animalia	Chordata	Reptilia	Squamata	Elapidae	*Naja katiensis*	LC	
Animalia	Chordata	Reptilia	Squamata	Natricidae	*Natriciteres olivacea*	LC	
Animalia	Chordata	Reptilia	Crocodylia	Crocodylidae	*Osteolaemus tetraspis*	VU	**Completely protected**
Animalia	Chordata	Reptilia	Squamata	Scincidae	*Panaspis togoensis*	LC	
Animalia	Chordata	Reptilia	Squamata	Pythonidae	*Python regius*	LC	Young protected
Animalia	Chordata	Reptilia	Squamata	Colubridae	*Telescopus variegatus*	LC	
Animalia	Chordata	Reptilia	Squamata	Leptotyphlopidae	*Tricheilostoma bicolor*	LC	
Animalia	Chordata	Reptilia	Squamata	Varanidae	*Varanus exanthematicus*	LC	

C.3. List of mammal species potentially present in the Pwalugu project study area according to the IUCN red list (2019)

Kingdom	Phylum	Class	Order	Family	Genus - species	IUCN status	Ghanian protection status
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Acomys johannis*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Alcelaphus buselaphus*	LC	Young protected
Animalia	Chordata	Mammalia	Carnivora	Mustelidae	*Aonyx capensis*	NT	**Completely protected**
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Arvicanthis rufinus*	LC	
Animalia	Chordata	Mammalia	Eulipotyphla	Erinaceidae	*Atelerix albiventris*	LC	
Animalia	Chordata	Mammalia	Carnivora	Herpestidae	*Atilax paludinosus*	LC	Young protected
Animalia	Chordata	Mammalia	Carnivora	Canidae	*Canis adustus*	LC	Young protected
Animalia	Chordata	Mammalia	Carnivora	Felidae	*Caracal caracal*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Cephalophus rufilatus*	LC	Young protected
Animalia	Chordata	Mammalia	Chiroptera	Molossidae	*Chaerephon major*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Molossidae	*Chaerephon nigeriae*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Molossidae	*Chaerephon pumilus*	LC	
Animalia	Chordata	Mammalia	Primates	Cercopithecidae	*Chlorocebus sabaeus*	LC	
Animalia	Chordata	Mammalia	Primates	Cercopithecidae	*Chlorocebus tantalus*	LC	
Animalia	Chordata	Mammalia	Carnivora	Viverridae	*Civettictis civetta*	LC	
Animalia	Chordata	Mammalia	Rodentia	Nesomyidae	*Cricetomys gambianus*	LC	
Animalia	Chordata	Mammalia	Eulipotyphla	Soricidae	*Crocidura foxi*	LC	
Animalia	Chordata	Mammalia	Eulipotyphla	Soricidae	*Crocidura fuscomurina*	LC	
Animalia	Chordata	Mammalia	Eulipotyphla	Soricidae	*Crocidura lamottei*	LC	
Animalia	Chordata	Mammalia	Eulipotyphla	Soricidae	*Crocidura olivieri*	LC	
Animalia	Chordata	Mammalia	Eulipotyphla	Soricidae	*Crocidura viaria*	LC	
Animalia	Chordata	Mammalia	Carnivora	Hyaenidae	*Crocuta crocuta*	LC	Young protected
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Damaliscus lunatus*	LC	**Completely protected**
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Dasymys rufulus*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Pteropodidae	*Eidolon helvum*	NT	
Animalia	Chordata	Mammalia	Chiroptera	Pteropodidae	*Epomophorus gambianus*	LC	
Animalia	Chordata	Mammalia	Primates	Cercopithecidae	*Erythrocebus patas*	LC	Young protected
Animalia	Chordata	Mammalia	Carnivora	Felidae	*Felis silvestris*	LC	Young protected
Animalia	Chordata	Mammalia	Rodentia	Sciuridae	*Funisciurus substriatus*	DD	
Animalia	Chordata	Mammalia	Primates	Galagidae	*Galago senegalensis*	LC	**Completely protected**
Animalia	Chordata	Mammalia	Primates	Galagidae	*Galago senegalensis ssp.senegalensis*	LC	**Completely protected**
Animalia	Chordata	Mammalia	Carnivora	Viverridae	*Genetta genetta*	LC	
Animalia	Chordata	Mammalia	Carnivora	Viverridae	*Genetta maculata*	LC	Young protected
Animalia	Chordata	Mammalia	Carnivora	Viverridae	*Genetta pardina*	LC	

Kingdom	Phylum	Class	Order	Family	Genus - species	IUCN status	Ghanian protection status
Animalia	Chordata	Mammalia	Carnivora	Viverridae	*Genetta thierryi*	LC	
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Gerbilliscus guineae*	LC	
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Gerbilliscus kempi*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Glauconycteris variegata*	LC	
Animalia	Chordata	Mammalia	Rodentia	Gliridae	*Graphiurus kelleni*	LC	
Animalia	Chordata	Mammalia	Rodentia	Sciuridae	*Heliosciurus gambianus*	LC	
Animalia	Chordata	Mammalia	Carnivora	Herpestidae	*Herpestes ichneumon*	LC	Young protected
Animalia	Chordata	Mammalia	Carnivora	Herpestidae	*Herpestes sanguineus*	LC	Young protected
Animalia	Chordata	Mammalia	Chiroptera	Hipposideridae	*Hipposideros abae*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Hipposideridae	*Hipposideros caffer*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Hipposideridae	*Hipposideros jonesi*	NT	
Animalia	Chordata	Mammalia	Chiroptera	Hipposideridae	*Hipposideros ruber*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Hippotragus equinus*	LC	**Completely protected**
Animalia	Chordata	Mammalia	Carnivora	Hyaenidae	*Hyaena hyaena*	NT	
Animalia	Chordata	Mammalia	Carnivora	Mustelidae	*Hydrictis maculicollis*	NT	
Animalia	Chordata	Mammalia	Rodentia	Hystricidae	*Hystrix cristata*	LC	
Animalia	Chordata	Mammalia	Carnivora	Herpestidae	*Ichneumia albicauda*	LC	Young protected
Animalia	Chordata	Mammalia	Carnivora	Mustelidae	*Ictonyx striatus*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Kobus ellipsiprymnus*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Kobus kob*	LC	Young protected
Animalia	Chordata	Mammalia	Chiroptera	Megadermatidae	*Lavia frons*	LC	
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Lemniscomys striatus*	LC	
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Lemniscomys zebra*	LC	
Animalia	Chordata	Mammalia	Carnivora	Felidae	*Leptailurus serval*	LC	
Animalia	Chordata	Mammalia	Lagomorpha	Leporidae	*Lepus victoriae*	LC	
Animalia	Chordata	Mammalia	Proboscidea	Elephantidae	*Loxodonta africana*	VU	**Completely protected**
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Mastomys erythroleucus*	LC	
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Mastomys natalensis*	LC	
Animalia	Chordata	Mammalia	Carnivora	Mustelidae	*Mellivora capensis*	LC	**Completely protected**
Animalia	Chordata	Mammalia	Chiroptera	Pteropodidae	*Micropteropus pusillus*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Molossidae	*Mops condylurus*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Molossidae	*Mops demonstrator*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Molossidae	*Mops midas*	LC	
Animalia	Chordata	Mammalia	Carnivora	Herpestidae	*Mungos gambianus*	LC	Young protected
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Mus haussa*	LC	
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Mus musculoides*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Pteropodidae	*Nanonycteris veldkampii*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Neoromicia capensis*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Neoromicia guineensis*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Neoromicia nana*	LC	

Kingdom	Phylum	Class	Order	Family	Genus - species	IUCN status	Ghanian protection status
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Neoromicia rendalli*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Neoromicia somalica*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Nycteridae	*Nycteris gambiensis*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Nycteridae	*Nycteris hispida*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Nycteridae	*Nycteris macrotis*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Nycteridae	*Nycteris thebaica*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Nycticeinops schlieffeni*	LC	
Animalia	Chordata	Mammalia	Tubulidentata	Orycteropodidae	*Orycteropus afer*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Ourebia ourebi*	LC	Young protected
Animalia	Chordata	Mammalia	Primates	Cercopithecidae	*Papio anubis*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Suidae	*Phacochoerus africanus*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Pipistrellus inexspectatus*	DD	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Pipistrellus rusticus*	LC	
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Praomys daltoni*	LC	
Animalia	Chordata	Mammalia	Hyracoidea	Procaviidae	*Procavia capensis*	LC	Young protected
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Redunca redunca*	LC	Young protected
Animalia	Chordata	Mammalia	Chiroptera	Rhinolophidae	*Rhinolophus denti*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Rhinolophidae	*Rhinolophus fumigatus*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Rhinolophidae	*Rhinolophus landeri*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Scotoecus albofuscus*	DD	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Scotoecus hirundo*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Scotophilus dinganii*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Scotophilus leucogaster*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Scotophilus nigrita*	LC	
Animalia	Chordata	Mammalia	Chiroptera	Vespertilionidae	*Scotophilus viridis*	LC	
Animalia	Chordata	Mammalia	Rodentia	Nesomyidae	*Steatomys caurinus*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Sylvicapra grimmia*	LC	Young protected
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Syncerus caffer*	NT	Young protected
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Taterillus gracilis*	LC	
Animalia	Chordata	Mammalia	Rodentia	Thryonomyidae	*Thryonomys swinderianus*	LC	
Animalia	Chordata	Mammalia	Cetartiodactyla	Bovidae	*Tragelaphus scriptus*	LC	**Completely protected**
Animalia	Chordata	Mammalia	Rodentia	Muridae	*Uranomys ruddi*	LC	
Animalia	Chordata	Mammalia	Rodentia	Sciuridae	*Xerus erythropus*	LC	

C.4. List of bird species potentially present in the Pwalugu project study area according to the IUCN red list (2020)

Kingdom: Animalia ; Phylum: Chordata

Class	Order	Family	Genus	Species	English name	IUCN status	Ghanian protection status
Aves	Accipitriformes	Accipitridae	*Accipiter*	*badius*	shikra	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Accipiter*	*erythropus*	red-legged sparrowhawk	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Accipiter*	*ovampensis*	Ovambo Sparrowhawk	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Accipiter*	*erythropus*	Red-legged Sparrowhawk	LC	**completely protected**
Aves	Passeriformes	Acrocephalidae	*Acrocephalus*	*arundinaceus*	great reed-warbler	LC	
Aves	Passeriformes	Acrocephalidae	*Acrocephalus*	*paludicola*	aquatic warbler	VU	
Aves	Passeriformes	Acrocephalidae	*Acrocephalus*	*rufescens*	Greater Swamp Warbler	LC	
Aves	Passeriformes	Acrocephalidae	*Acrocephalus*	*schoenobaenus*	sedge warbler	LC	
Aves	Passeriformes	Acrocephalidae	*Acrocephalus*	*scirpaceus*	common reed-warbler	LC	
Aves	Charadriiformes	Scolopacidae	*Actitis*	*hypoleucos*	common sandpiper	LC	
Aves	Charadriiformes	Jacanidae	*Actophilornis*	*africanus*	african jacana	LC	
Aves	Psittaciformes	Psittacidae	*Agapornis*	*pullarius*	red-headed lovebird	LC	
Aves	Passeriformes	Muscicapidae	*Agricola*	*pallidus*	pale flycatcher	LC	
Aves	Anseriformes	Anatidae	*Alopochen*	*aegyptiaca*	egyptian goose	LC	
Aves	Passeriformes	Estrildidae	*Amandava*	*subflava*	Zebra Waxbill	LC	
Aves	Passeriformes	Ploceidae	*Anaplectes*	*leuconotos*	Northern Red-headed Weaver	LC	
Aves	Anseriformes	Anatidae	*Anas*	*acuta*	northern pintail	LC	
Aves	Anseriformes	Anatidae	*Anas*	*crecca*	common teal	LC	
Aves	Ciconiiformes	Ciconiidae	*Anastomus*	*lamelligerus*	african openbill	LC	
Aves	Suliformes	Anhingidae	*Anhinga*	*rufa*	african darter	LC	
Aves	Passeriformes	Viduidae	*Anomalospiza*	*imberbis*	Cuckoo-finch	LC	
Aves	Passeriformes	Remizidae	*Anthoscopus*	*parvulus*	Yellow Penduline-tit	LC	
Aves	Passeriformes	Motacillidae	*Anthus*	*cervinus*	red-throated pipit	LC	
Aves	Passeriformes	Motacillidae	*Anthus*	*leucophrys*	plain-backed pipit	LC	
Aves	Passeriformes	Motacillidae	*Anthus*	*trivialis*	tree pipit	LC	
Aves	Passeriformes	Cisticolidae	*Apalis*	*flavida*	yellow-breasted apalis	LC	
Aves	Caprimulgiformes	Apodidae	*Apus*	*apus*	common swift	LC	
Aves	Caprimulgiformes	Apodidae	*Apus*	*caffer*	white-rumped swift	LC	
Aves	Caprimulgiformes	Apodidae	*Apus*	*pallidus*	pallid swift	LC	
Aves	Accipitriformes	Accipitridae	*Aquila*	*rapax*	Tawny eagle	VU	**completely protected**
Aves	Pelecaniformes	Ardeidae	*Ardea*	*alba*	great white egret	LC	
Aves	Pelecaniformes	Ardeidae	*Ardea*	*brachyrhyncha*	yellow-billed egret	LC	
Aves	Pelecaniformes	Ardeidae	*Ardea*	*cinerea*	grey heron	LC	
Aves	Pelecaniformes	Ardeidae	*Ardea*	*melanocephala*	black-headed heron	LC	

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Aves	Pelecaniformes	Ardeidae	*Ardea*	*purpurea*	purple heron	LC	
Aves	Pelecaniformes	Ardeidae	*Ardea*	*goliath*	Goliath Heron	LC	
Aves	Pelecaniformes	Ardeidae	*Ardeola*	*ralloides*	squacco heron	LC	
Aves	Passeriformes	Pycnonotidae	*Atimastillas*	*flavicollis*	Yellow-throated Greenbul	LC	
Aves	Accipitriformes	Accipitridae	*Aviceda*	*cuculoides*	african cuckoo-hawk	LC	**completely protected**
Aves	Gruiformes	Gruidae	*Balearica*	*pavonina*	Black crowned crane	VU	**completely protected**
Aves	Passeriformes	Platysteiridae	*Batis*	*senegalensis*	senegal batis	LC	
Aves	Pelecaniformes	Threskiornithidae	*Bostrychia*	*hagedash*	hadada ibis	LC	**completely protected**
Aves	Pelecaniformes	Ardeidae	*Botaurus*	*stellaris*	eurasian bittern	LC	
Aves	Passeriformes	Ploceidae	*Bubalornis*	*albirostris*	White-billed Buffalo-weaver	LC	
Aves	Strigiformes	Strigidae	*Bubo*	*cinerascens*	greyish eagle-owl	LC	**completely protected**
Aves	Strigiformes	Strigidae	*Bubo*	*lacteus*	Verreaux's Eagle-owl	LC	**completely protected**
Aves	Pelecaniformes	Ardeidae	*Bubulcus*	*ibis*	cattle egret	LC	**completely protected**
Aves	Bucerotiformes	Bucerotidae*	*Bucorvus*	*abyssinicus*	Northern Ground-hornbill	VU	
Aves	Charadriiformes	Burhinidae	*Burhinus*	*senegalensis*	Senegal Thick-knee	LC	
Aves	Charadriiformes	Burhinidae	*Burhinus*	*capensis*	Spotted Thick-knee	LC	
Aves	Accipitriformes	Accipitridae	*Butastur*	*rufipennis*	grasshopper buzzard	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Buteo*	*auguralis*	Red-necked Buzzard	LC	**completely protected**
Aves	Pelecaniformes	Ardeidae	*Butorides*	*striata*	green-backed heron	LC	
Aves	Pelecaniformes	Ardeidae	*Calherodius*	*leuconotus*	white-backed night-heron	LC	
Aves	Charadriiformes	Scolopacidae	*Calidris*	*ferruginea*	curlew sandpiper	NT	
Aves	Charadriiformes	Scolopacidae	*Calidris*	*minuta*	little stint	LC	
Aves	Charadriiformes	Scolopacidae	*Calidris*	*pugnax*	ruff	LC	
Aves	Charadriiformes	Scolopacidae	*Calidris*	*temminckii*	temminck's stint	LC	
Aves	Passeriformes	Cisticolidae	*Camaroptera*	*brachyura*	bleating camaroptera	LC	
Aves	Passeriformes	Campephagidae	*Campephaga*	*phoenicea*	red-shouldered cuckooshrike	LC	
Aves	Piciformes	Picidae	*Campethera*	*abingoni*	Golden-tailed Woodpecker	LC	
Aves	Piciformes	Picidae	*Campethera*	*punctuligera*	fine-spotted woodpecker	LC	
Aves	Caprimulgiformes	Caprimuldidae	*Caprimulgus*	*europaeus*	european nightjar	LC	
Aves	Caprimulgiformes	Caprimuldidae	*Caprimulgus*	*inornatus*	Plain Nightjar	LC	
Aves	Caprimulgiformes	Caprimuldidae	*Caprimulgus*	*longipennis*	standard-winged nightjar	LC	
Aves	Caprimulgiformes	Caprimuldidae	*Caprimulgus*	*tristigma*	freckled nightjar	LC	
Aves	Passeriformes	Campephagidae	*Ceblepyris*	*pectoralis*	white-breasted cuckooshrike	LC	
Aves	Passeriformes	Hirundinidae	*Cecropis*	*abyssinica*	Lesser Striped Swallow	LC	
Aves	Passeriformes	Hirundinidae	*Cecropis*	*daurica*	red-rumped swallow	LC	
Aves	Passeriformes	Hirundinidae	*Cecropis*	*semirufa*	rufous-chested swallow	LC	

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Aves	Passeriformes	Hirundinidae	*Cecropis*	*senegalensis*	Mosque Swallow	LC	
Aves	Cuculiformes	Cuculidae	*Centropus*	*grillii*	black coucal	LC	
Aves	Cuculiformes	Cuculidae	*Centropus*	*senegalensis*	Senegal Coucal	LC	
Aves	Passeriformes	Muscicapidae	*Cercotrichas*	*galactotes*	rufous-tailed scrub-robin	LC	
Aves	Coraciiformes	Alcedinidae	*Ceryle*	*rudis*	pied kingfisher	LC	
Aves	Passeriformes	Nectariniidae	*Chalcomitra*	*senegalensis*	scarlet-chested sunbird	LC	
Aves	Charadriiformes	Charadriidae	*Charadrius*	*alexandrinus*	kentish plover	LC	
Aves	Charadriiformes	Charadriidae	*Charadrius*	*dubius*	little ringed plover	LC	
Aves	Charadriiformes	Charadriidae	*Charadrius*	*forbesi*	Forbes's plover	LC	
Aves	Charadriiformes	Charadriidae	*Charadrius*	*hiaticulata*	common ringed plover	LC	
Aves	Charadriiformes	Charadriidae	*Charadrius*	*pecuarius*	Kittlitz's plover	LC	
Aves	Accipitriformes	Accipitridae	*Chelictinia*	*riocourii*	Scissor-tailed Kite	LC	**completely protected**
Aves	Charadriiformes	Laridae	*Chlidonias*	*hybrida*	whiskered tern	LC	
Aves	Charadriiformes	Laridae	*Chlidonias*	*leucopterus*	white-winged tern	LC	
Aves	Passeriformes	Malaconotidae	*Chlorophoneus*	*sulfureopectus*	orange-breasted bush-strike	LC	
Aves	Cuculiformes	Cuculidae	*Chrysococcyx*	*caprius*	Diederik Cuckoo	LC	
Aves	Cuculiformes	Cuculidae	*Chrysococcyx*	*cupreus*	African Emerald Cuckoo	LC	
Aves	Cuculiformes	Cuculidae	*Chrysococcyx*	*klaas*	Klaas's cuckoo	LC	
Aves	Ciconiiformes	Ciconiidae	*Ciconia*	*abdimii*	Abdim's Stork	LC	
Aves	Ciconiiformes	Ciconiidae	*Ciconia*	*ciconia*	white stork	LC	
Aves	Ciconiiformes	Ciconiidae	*Ciconia*	*microscelis*	african woollyneck	LC	
Aves	Ciconiiformes	Ciconiidae	*Ciconia*	*nigra*	black stork	LC	
Aves	Ciconiiformes	Ciconiidae	*Ciconia*	*abdimii*	Abdim's Stork		
Aves	Passeriformes	Sturnidae	*Cinnyricinclus*	*leucogaster*	Violet-backed Starling	LC	
Aves	Passeriformes	Nectariniidae	*Cinnyris*	*pulchellus*	beautiful sunbird	LC	
Aves	Passeriformes	Nectariniidae	*Cinnyris*	*coccinigastrus*	Splendid Sunbird	LC	
Aves	Passeriformes	Nectariniidae	*Cinnyris*	*cupreus*	Copper Sunbird	LC	
Aves	Passeriformes	Nectariniidae	*Cinnyris*	*pulchellus*	beautiful sunbird	LC	
Aves	Passeriformes	Nectariniidae	*Cinnyris*	*venustus*	variable sunbird	LC	
Aves	Accipitriformes	Accipitridae	*Circaetus*	*beaudouini*	Beaudouin's sanke-eagle	VU	**completely protected**
Aves	Accipitriformes	Accipitridae	*Circaetus*	*cinerascens*	western banded snake-eagle	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Circaetus*	*cinereus*	Brown Snake-eagle	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Circaetus*	*gallicus*	short-toed snake-eagle	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Circus*	*aeruginosus*	western marsh-harrier	LC	**completely protected**
Aves	Accipitriformes	Accipitridae	*Circus*	*macrourus*	pallid harrier	NT	**completely protected**
Aves	Accipitriformes	Accipitridae	*Circus*	*pygargus*	montagu's harrier	LC	**completely protected**
Aves	Passeriformes	Cisticolidae	*Cisticola*	*eximius*	Black-backed Cisticola	LC	
Aves	Passeriformes	Cisticolidae	*Cisticola*	*juncidis*	zitting cisticola	LC	

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Aves	Passeriformes	Cisticolidae	*Cisticola*	*aberrans*	Lazy Cisticola	LC	
Aves	Passeriformes	Cisticolidae	*Cisticola*	*brachypterus*	Short-winged Cisticola	LC	
Aves	Passeriformes	Cisticolidae	*Cisticola*	*erythrops*	Red-faced Cisticola	LC	
Aves	Passeriformes	Cisticolidae	*Cisticola*	*marginatus*	winding cisticola	LC	
Aves	Passeriformes	Cisticolidae	*Cisticola*	*rufus*	Rufous Cisticola	LC	
Aves	Cuculiformes	Cuculidae	*Clamator*	*glandarius*	great spotted cuckoo	LC	
Aves	Cuculiformes	Cuculidae	*Clamator*	*jacobinus*	Jacobin Cuckoo	LC	
Aves	Cuculiformes	Cuculidae	*Clamator*	*levaillantii*	Levaillant's Cuckoo	LC	
Aves	Columbiformes	Columbidae	*Columba*	*livia*	rock dove	LC	
Aves	Coraciiformes	Coraciidae	*Coracias*	*abyssinicus*	abyssinian roller	LC	
Aves	Coraciiformes	Coraciidae	*Coracias*	*cyanogaster*	Blue-bellied Roller	LC	
Aves	Coraciiformes	Coraciidae	*Coracias*	*garrulus*	european roller	LC	
Aves	Coraciiformes	Coraciidae	*Coracias*	*naevius*	Purple Roller	LC	
Aves	Passeriformes	Laniidae	*Corvinella*	*corvina*	Yellow-billed Shrike	LC	
Aves	Passeriformes	Corvidae	*Corvus*	*albus*	pied crow	LC	
Aves	Coraciiformes	Alcedinidae	*Corythornis*	*cristatus*	Malachite Kingfisher	LC	
Aves	Passeriformes	Muscicapidae	*Cossypha*	*albicapillus*	white-crowned robin-chat	LC	
Aves	Passeriformes	Muscicapidae	*Cossypha*	*niveicapilla*	snowy-crowned robin-chat	LC	
Aves	Galliformes	Phasianidae	*Coturnix*	*coturnix*	common quail	LC	
Aves	Gruiformes	Rallidae	*Crex*	*egregia*	African Crake	LC	
Aves	Musophagiformes	Musophagidae	*Crinifer*	*piscator*	western plantain-eater	LC	
Aves	Passeriformes	Fringillidae	*Crithagra*	*canicapilla*	west african seedeater	LC	
Aves	Passeriformes	Fringillidae	*Crithagra*	*leucopygia*	white-rumped seedeater	LC	
Aves	Passeriformes	Fringillidae	*Crithagra*	*mozambica*	Yellow-fronted Canary	LC	
Aves	Charadriiformes	Glareolidae	*Cursorius*	*temminckii*	Temminck's Courser	LC	
Aves	Passeriformes	Muscicapidae	*Cyanecula*	*svecica*	bluethroat	LC	
Aves	Caprimulgiformes	Apodidae	*Cypsiurus*	*parvus*	African Palm-swift	LC	
Aves	Passeriformes	Hirundinidae	*Delichon*	*urbicum*	northern house martin	LC	
Aves	Anseriformes	Anatidae	*Dendrocygna*	*bicolor*	fulvous whistling-duck	LC	
Aves	Anseriformes	Anatidae	*Dendrocygna*	*viduata*	white-faced whistling-duck	LC	
Aves	Piciformes	Picidae	*Dendropicos*	*fuscescens*	cardinal woodpecker	LC	
Aves	Piciformes	Picidae	*Dendropicos*	*goertae*	grey woodpecker	LC	
Aves	Passeriformes	Dicruridae	*Dicrurus*	*adsimilis*	fork-tailed drongo	LC	
Aves	Passeriformes	Malaconotidae	*Dryoscopus*	*gambensis*	Northern Puffback	LC	
Aves	Pelecaniformes	Ardeidae	*Egretta*	*garzetta*	little egret	LC	**completely protected**
Aves	Pelecaniformes	Ardeidae	*Egretta*	*gularis*	western reef-egret	LC	
Aves	Accipitriformes	Accipitridae	*Elanus*	*caeruleus*	black-winged kite	LC	**completely protected**
Aves	Passeriformes	Emberizidae	*Emberiza*	*cabanisi*	Cabanis's Bunting	LC	
Aves	Passeriformes	Emberizidae	*Emberiza*	*goslingi*	grey-throated bunting	LC	
Aves	Passeriformes	Emberizidae	*Emberiza*	*hortulana*	ortolan bunting	LC	

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Aves	Passeriformes	Emberizidae	*Emberiza*	*cabanisi*	Cabanis's Bunting	LC	
Aves	Ciconiiformes	Ciconiidae	*Ephippiorhynchus*	*senegalensis*	saddlebill	LC	**completely protected**
Aves	Passeriformes	Cisticolidae	*Eremomela*	*pusilla*	Senegal Eremomela	LC	
Aves	Passeriformes	Alaudidae	*Eremopterix*	*leucotis*	Chestnut-backed Sparrow-lark	LC	
Aves	Passeriformes	Estrildidae	*Estrilda*	*coerulescens*	lavender waxbill	LC	
Aves	Passeriformes	Estrildidae	*Estrilda*	*melpoda*	orange-cheeked waxbill	LC	
Aves	Passeriformes	Estrildidae	*Estrilda*	*troglodytes*	black-rumped waxbill	LC	
Aves	Passeriformes	Estrildidae	*Euodice*	*cantans*	african silverbill	LC	
Aves	Passeriformes	Ploceidae	*Euplectes*	*hordeaceus*	black-winged bishop	LC	
Aves	Passeriformes	Ploceidae	*Euplectes*	*macroura*	Yellow-mantled Widowbird	LC	
Aves	Passeriformes	Ploceidae	*Euplectes*	*afer*	yellow-crowned bishop	LC	
Aves	Passeriformes	Ploceidae	*Euplectes*	*franciscanus*	Northern Red Bishop	LC	
Aves	Otidiformes	Otididae	*Eupodotis*	*senegalensis*	xhite-bellied bustard	LC	
Aves	Coraciiformes	Coraciidae	*Eurystomus*	*glaucurus*	Broad-billed Roller	LC	
Aves	Falconiformes	Falconidae	*Falco*	*alopex*	Fox Kestrel	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*biarmicus*	lanner falcon	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*cuvierii*	african hobby	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*naumanni*	lesser kestrel	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*peregrinus*	peregrine falcon	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*ruficollis*	red-necked falcon	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*subbuteo*	eurasian hobby	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*tinnunculus*	common kestrel	LC	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*vespertinus*	red-footed falcon	NT	**completely protected**
Aves	Falconiformes	Falconidae	*Falco*	*ardosiaceus*	Grey Kestrel	LC	**completely protected**
Aves	Passeriformes	Muscicapidae	*Ficedula*	*hypoleuca*	European pied flycatcher	LC	
Aves	Passeriformes	Muscicapidae	*Fraseria*	*plumbea*	Grey Tit-flycatcher	LC	
Aves	Passeriformes	Alaudidae	*Galerida*	*cristata*	crested lark	LC	
Aves	Passeriformes	Alaudidae	*Galerida*	*modesta*	Sun Lark	LC	
Aves	Charadriiformes	Scolopacidae	*Gallinago*	*media*	great snipe	NT	
Aves	Charadriiformes	Scolopacidae	*Gallinago*	*gallinago*	common snipe	LC	
Aves	Gruiformes	Rallidae	*Gallinula*	*chloropus*	common moorhen	LC	
Aves	Charadriiformes	Glareolidae	*Glareola*	*cinerea*	Grey Pratincole	LC	
Aves	Charadriiformes	Glareolidae	*Glareola*	*pratincola*	collared pratincole	LC	
Aves	Strigiformes	Strigidae	*Glaucidium*	*perlatum*	Pearl-spotted Owlet	LC	completely protected
Aves	Passeriformes	Passeridae	*Gymnoris*	*dentata*	Sahel Bush-sparrow	LC	
Aves	Accipitriformes	Accipitridae	*Gyps*	*africanus*	white-backed vulture	CR	completely protected

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Aves	Accipitriformes	Accipitridae	*Gyps*	*rueppelli*	Rüppell's Vulture	CR	completely protected
Aves	Coraciiformes	Alcedinidae	*Halcyon*	*leucocephala*	grey-headed kingfisher	LC	
Aves	Coraciiformes	Alcedinidae	*Halcyon*	*malimbica*	blue-breasted kingfisher	LC	
Aves	Coraciiformes	Alcedinidae	*Halcyon*	*chelicuti*	Striped Kingfisher	LC	
Aves	Passeriformes	Nectariniidae	*Hedydipna*	*platura*	Pygmy Sunbird	LC	
Aves	Accipitriformes	Accipitridae	*Hieraaetus*	*pennatus*	booted eagle	LC	completely protected
Aves	Charadriiformes	Recurvirostridae	*Himantopus*	*himantopus*	black-winged stilt	LC	
Aves	Passeriformes	Acrocephalidae	*Hippolais*	*polyglotta*	melodius warbler	LC	
Aves	Passeriformes	Hirundinidae	*Hirundo*	*leucosoma*	Pied-winged Swallow	LC	
Aves	Passeriformes	Hirundinidae	*Hirundo*	*smithii*	Wire-tailed Swallow	LC	
Aves	Charadriiformes	Laridae	*Hydroprogne*	*caspia*	caspian tern	LC	
Aves	Passeriformes	Cisticolidae	*Hypergerus*	*atriceps*	Oriole Warbler	LC	
Aves	Piciformes	Indicatoridae	*Indicator*	*indicator*	greater honeyguide	LC	
Aves	Coraciiformes	Alcedinidae	*Ispidina*	*picta*	african pygmy-kingfisher	LC	
Aves	Pelecaniformes	Ardeidae	*Ixobrychus*	*minutus*	common little bittern	LC	
Aves	Pelecaniformes	Ardeidae	*Ixobrychus*	*sturmii*	Dwarf Bittern	LC	
Aves	Piciformes	Picidae	*Jynx*	*torquilla*	eurasian wryneck	LC	
Aves	Accipitriformes	Accipitridae	*Kaupifalco*	*monogrammicus*	lizard buzzard	LC	**completely protected**
Aves	Passeriformes	Estrildidae	*Lagonosticta*	*rufopicta*	Bar-breasted Firefinch	LC	
Aves	Passeriformes	Estrildidae	*Lagonosticta*	*senegala*	Red-billed Firefinch	LC	
Aves	Passeriformes	Sturnidae	*Lamprotornis*	*caudatus*	Long-tailed Glossy Starling	LC	
Aves	Passeriformes	Sturnidae	*Lamprotornis*	*purpureus*	Purple Starling	LC	
Aves	Passeriformes	Malaconotidae	*Laniarius*	*barbarus*	Yellow-crowned Gonolek	LC	
Aves	Passeriformes	Laniidae	*Lanius*	*senator*	woodchat shrike	LC	
Aves	Charadriiformes	Laridae	*Larus*	*cirrocephalus*	Grey-headed Gull	LC	
Aves	Ciconiiformes	Ciconiidae	*Leptoptilos*	*crumenifer*	marabou	LC	**completely protected**
Aves	Charadriiformes	Scolopacidae	*Limosa*	*limosa*	black-tailed godwit	NT	
Aves	Otidiformes	Otididae	*Lissotis*	*melanogaster*	back-bellied bustard	LC	
Aves	Passeriformes	Locustellidae	*Locustella*	*luscinioides*	savi's warbler	LC	
Aves	Passeriformes	Locustellidae	*Locustella*	*naevia*	common grasshopper-warbler	LC	
Aves	Accipitriformes	Accipitridae	*Lophaetus*	*occipitalis*	long-crested eagle	LC	**completely protected**
Aves	Bucerotiformes	Bucerotidae	*Lophoceros*	*nasutus*	African Grey Hornbill	LC	
Aves	Piciformes	Lybiidae	*Lybius*	*vieilloti*	vieillot's barbet	LC	
Aves	Charadriiformes	Scolopacidae	*Lymnocryptes*	*minimus*	jack snipe	LC	
Aves	Accipitriformes	Accipitridae	*Macheiramphus*	*alcinus*	Bat Hawk	LC	**completely protected**
Aves	Passeriformes	Motacillidae	*Macronyx*	*croceus*	yellow-throated longclaw	LC	
Aves	Passeriformes	Muscicapidae	*Melaenornis*	*edolioides*	Northern Black-flycatcher	LC	

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Aves	Accipitriformes	Accipitridae	*Melierax*	*metabates*	Dark Chanting-goshawk	LC	**completely protected**
Aves	Coraciiformes	Meropidae	*Merops*	*bulocki*	Red-throated Bee-eater	LC	
Aves	Coraciiformes	Meropidae	*Merops*	*nubicus*	Northern Carmine Bee-eater	LC	
Aves	Coraciiformes	Meropidae	*Merops*	*persicus*	blue-cheeked bee-eater	LC	
Aves	Coraciiformes	Meropidae	*Merops*	*pusillus*	Little Bee-eater	LC	
Aves	Coraciiformes	Meropidae	*Merops*	*albicollis*	White-throated Bee-eater	LC	
Aves	Suliformes	Phalacrocoracidae	*Microcarbo*	*africanus*	Long-tailed Cormorant	LC	
Aves	Passeriformes	Alaudidae	*Mirafra*	*javanica*	Horsfield's Bushlark	LC	
Aves	Passeriformes	Muscicapidae	*Monticola*	*saxatilis*	rufous tailed rock-thrush	LC	
Aves	Passeriformes	Motacillidae	*Motacilla*	*alba*	white wagtail	LC	
Aves	Passeriformes	Motacillidae	*Motacilla*	*flava*	western yellow wagtail	LC	
Aves	Passeriformes	Muscicapidae	*Muscicapa*	*aquatica*	Swamp Flycatcher	LC	
Aves	Passeriformes	Muscicapidae	*Muscicapa*	*gambagae*	Gambaga Flycatcher	LC	
Aves	Ciconiiformes	Ciconiidae	*Mycteria*	*ibis*	yellow-billed stork	LC	
Aves	Accipitriformes	Accipitridae	*Necrosyrtes*	*monachus*	hooded vulture	CR	**completely protected**
Aves	Accipitriformes	Accipitridae	*Neophron*	*percnopterus*	egyptian vulture	EN	**completely protected**
Aves	Otidiformes	Otididae	*Neotis*	*denhami*	Denham's bustard	NT	
Aves	Anseriformes	Anatidae	*Nettapus*	*auritus*	african pygmy-goose	LC	
Aves	Galliformes	Numididae	*Numida*	*meleagris*	helmeted guineafowl	LC	
Aves	Pelecaniformes	Ardeidae	*Nycticorax*	*nycticorax*	black-crowned night-heron	LC	
Aves	Columbiformes	Columbidae	*Oena*	*capensis*	Namaqua Dove	LC	
Aves	Passeriformes	Muscicapidae	*Oenanthe*	*familiaris*	Familiar Chat	LC	
Aves	Passeriformes	Muscicapidae	*Oenanthe*	*heuglinii*	Heuglin's Wheatear	LC	
Aves	Passeriformes	Oriolidae	*Oriolus*	*auratus*	African Golden Oriole	LC	
Aves	Strigiformes	Strigidae	*Otus*	*scops*	eurasian scops-owl	LC	**completely protected**
Aves	Strigiformes	Strigidae	*Otus*	*senegalensis*	African Scops-owl	LC	**completely protected**
Aves	Accipitriformes	Pandionidae	*Pandion*	*haliaetus*	osprey	LC	
Aves	Gruiformes	Rallidae	*Paragallinula*	*angulata*	lesser moorhen	LC	
Aves	Passeriformes	Passeridae	*Passer*	*griseus*	Northern Grey-headed Sparrow	LC	
Aves	Pelecaniformes	Pelecanidae	*Pelecanus*	*onocrotalus*	great white pelican	LC	
Aves	Passeriformes	Phylloscopidae	*Phylloscopus*	*ibericus*	iberian chiffchaff	LC	
Aves	Passeriformes	Phylloscopidae	*Phylloscopus*	*sibilatrix*	wood warbler	LC	
Aves	Passeriformes	Phylloscopidae	*Phylloscopus*	*trochilus*	willow warbler	LC	
Aves	Passeriformes	Phylloscopidae	*Phylloscopus*	*bonelli*	Western Bonelli's Warbler	LC	
Aves	Passeriformes	Alaudidae	*Pinarocorys*	*erythropygia*	Rufous-rumped Lark	LC	
Aves	Passeriformes	Platysteiridae	*Platysteira*	*cyanea*	Brown-throated Wattle-eye	LC	
Aves	Pelecaniformes	Threskiornithidae	*Plegadis*	*falcinellus*	glossy ibis	LC	

Class	Order	Family	Genus	Species	English name	IUCN status	Ghanian protection status
Aves	Passeriformes	Ploceidae	*Plocepasser*	*superciliosus*	chestnut-crowned sparrow-weaver	LC	
Aves	Passeriformes	Ploceidae	*Ploceus*	*cucullatus*	village weaver	LC	
Aves	Passeriformes	Ploceidae	*Ploceus*	*vitellinus*	Vitelline Masked Weaver	LC	
Aves	Gruiformes	Heliornithidae	*Podica*	*senegalensis*	African Finfoot	LC	
Aves	Piciformes	Lybiidae	*Pogoniulus*	*chrysoconus*	Yellow-fronted Tinkerbird	LC	
Aves	Psittaciformes	Psittacidae	*Poicephalus*	*senegalus*	Senegal Parrot	LC	
Aves	Accipitriformes	Accipitridae	*Polemaetus*	*bellicosus*	Martial eagle	VU	**completely protected**
Aves	Passeriformes	Cisticolidae	*Prinia*	*subflava*	Tawny-flanked Prinia	LC	
Aves	Passeriformes	Cisticolidae	*Prinia*	*erythroptera*	Red-winged Prinia	LC	
Aves	Passeriformes	Vangidae	*Prionops*	*plumatus*	White-crested Helmetshrike	LC	
Aves	Passeriformes	Vangidae	*Prionops*	*caniceps*	Red-billed Helmetshrike	LC	
Aves	Passeriformes	Vangidae	*Prionops*	*caniceps*	Red-billed Helmetshrike	LC	
Aves	Psittaciformes	Psittacidae	*Psittacula*	*krameri*	rose-ringed parakeet	LC	
Aves	Galliformes	Phasianidae	*Pternistis*	*bicalcaratus*	double-spurred francolin	LC	
Aves	Pteroclidiformes	Pteroclidae	*Pterocles*	*quadricinctus*	Four-banded Sandgrouse	LC	
Aves	Passeriformes	Corvidae	*Ptilostomus*	*afer*	Piapiac	LC	
Aves	Passeriformes	Pycnonotidae	*Pycnonotus*	*barbatus*	Common Bulbul	LC	
Aves	Passeriformes	Estrildidae	*Pytilia*	*phoenicoptera*	Red-winged Pytilia	LC	
Aves	Passeriformes	Ploceidae	*Quelea*	*erythrops*	red-headed quelea	LC	
Aves	Bucerotiformes	Phoeniculidae	*Rhinopomastus*	*aterrimus*	Black Scimitarbill	LC	
Aves	Passeriformes	Hirundinidae	*Riparia*	*riparia*	collared sand martin	LC	
Aves	Charadriiformes	Rostratulidae	*Rostratula*	*benghalensis*	greater painted-snipe	LC	
Aves	Charadriiformes	Laridae	*Rynchops*	*flavirostris*	african skimmer	NT	
Aves	Accipitriformes	Sagittariidae	*Sagittarius*	*serpentarius*	secretarybird	VU	**completely protected**
Aves	Anseriformes	Anatidae	*Sarkidiornis*	*melanotos*	african comb duck	LC	
Aves	Passeriformes	Muscicapidae	*Saxicola*	*rubetra*	whinchat	LC	
Aves	Pelecaniformes	Scopidae	*Scopus*	*umbretta*	hamerkop	LC	
Aves	Anseriformes	Anatidae	*Spatula*	*clypeata*	northern shoveler	LC	
Aves	Anseriformes	Anatidae	*Spatula*	*querquedula*	garganey	LC	
Aves	Passeriformes	Estrildidae	*Spermestes*	*cucullata*	Bronze Mannikin	LC	
Aves	Columbiformes	Columbidae	*Spilopelia*	*senegalensis*	laughing dove	LC	
Aves	Columbiformes	Columbidae	*Streptopelia*	*semitorquata*	red-eyed dove	LC	
Aves	Columbiformes	Columbidae	*Streptopelia*	*turtur*	european turtle-dove	VU	
Aves	Columbiformes	Columbidae	*Streptopelia*	*vinacea*	Vinaceous Dove	LC	
Aves	Columbiformes	Columbidae	*Streptopelia*	*decipiens*	Mourning Collared-dove	LC	
Aves	Passeriformes	Sylviidae	*Sylvia*	*atricapilla*	eurasian blackcap	LC	
Aves	Passeriformes	Sylviidae	*Sylvia*	*borin*	garden warbler	LC	
Aves	Passeriformes	Sylviidae	*Sylvia*	*communis*	common whitethroat	LC	

Class	Order	Family	Genus	Species	English name	IUCN status	Ghanian protection status
Aves	Podicipediformes	Podicipedidae	*Tachybaptus*	*ruficollis*	little grebe	LC	
Aves	Caprimulgiformes	Apodidae	*Tachymarptis*	*melba*	alpine swift	LC	
Aves	Accipitriformes	Accipitridae	*Terathopius*	*ecaudatus*	Bateleur	NT	**completely protected**
Aves	Passeriformes	Monarchidae	*Terpsiphone*	*viridis*	African Paradise-flycatcher	LC	
Aves	Pelecaniformes	Threskiornithidae	*Threskiornis*	*aethiopicus*	african sacred ibis	LC	**completely protected**
Aves	Bucerotiformes	Bucerotidae	*Tockus*	*erythrorhynchus*	Red-billed Hornbill	LC	
Aves	Columbiformes	Columbidae	*Treron*	*calvus*	African Green-pigeon	LC	
Aves	Accipitriformes	Accipitridae	*Trigonoceps*	*occipitalis*	white-headed vulture	CR	**completely protected**
Aves	Charadriiformes	Scolopacidae	*Tringa*	*erythropus*	spotted redshank	LC	
Aves	Charadriiformes	Scolopacidae	*Tringa*	*glareola*	wood sanpiper	LC	
Aves	Charadriiformes	Scolopacidae	*Tringa*	*nebularia*	common greenshank	LC	
Aves	Charadriiformes	Scolopacidae	*Tringa*	*ochropus*	green sandpiper	LC	
Aves	Charadriiformes	Scolopacidae	*Tringa*	*stagnatillis*	marsh sandpiper	LC	
Aves	Charadriiformes	Scolopacidae	*Tringa*	*totanus*	common redshank	LC	
Aves	Passeriformes	Leiotrichidae	*Turdoides*	*plebejus*	Brown Babbler	LC	
Aves	Passeriformes	Turdidae	*Turdus*	*pelios*	african thrush	LC	
Aves	Columbiformes	Columbidae	*Turtur*	*abyssinicus*	Black-billed Wood-dove	LC	
Aves	Strigiformes	Tytonidae	*Tyto*	*alba*	common barn-owl	LC	**completely protected**
Aves	Bucerotiformes	Upupidae	*Upupa*	*epops*	common hoopoe	LC	
Aves	Passeriformes	Estrildidae	*Uraeginthus*	*bengalus*	Red-cheeked Cordon-bleu	LC	
Aves	Charadriiformes	Charadriidae	*Vanellus*	*spinosus*	spur-winged lapwing	LC	
Aves	Charadriiformes	Charadriidae	*Vanellus*	*albiceps*	White-headed Lapwing	LC	
Aves	Charadriiformes	Charadriidae	*Vanellus*	*senegallus*	Wattled Lapwing	LC	
Aves	Charadriiformes	Charadriidae	*Vanellus*	*tectus*	Black-headed Lapwing	LC	
Aves	Passeriformes	Viduidae	*Vidua*	*chalybeata*	Village Indigobird	LC	
Aves	Passeriformes	Viduidae	*Vidua*	*togoensis*	Togo Paradise-whydah	LC	
Aves	Passeriformes	Viduidae	*Vidua*	*wilsoni*	Wilson's Indigobird	LC	
Aves	Passeriformes	Zosteropidae	*Zosterops*	*senegalensis*	African Yellow White-eye	LC	

C.5. List of fish species potentially present in the Pwalugu project study area according to the IUCN red list (2020)

Kingdom	Phylum	Class	Order	Family	Genus - species	IUCN status
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Alestes baremoze*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Alestes dentex*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Amphiliidae	*Amphilius atesuensis*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Ariidae	*Arius gigas*	NT
Animalia	Chordata	Actinopterygii	Siluriformes	Claroteidae	*Auchenoglanis occidentalis*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Bagridae	*Bagrus bajad*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Bagridae	*Bagrus docmak*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus ablabes*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus atakorensis*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus baudoni*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus bawkuensis*	EN
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus macinensis*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus macrops*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus nigeriensis*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus pobeguini*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus punctitaeniatus*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Barbus sublineatus*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Brevimyrus niger*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Brycinus leuciscus*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Brycinus macrolepidotus*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Brycinus nurse*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Chelaethiops bibie*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Chiloglanis voltae*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Claroteidae	*Chrysichthys auratus*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Clariidae	*Clarias anguillaris*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Claroteidae	*Clarotes laticeps*	LC
Animalia	Chordata	Actinopterygii	Gonorynchiformes	Kneriidae	*Cromeria nilotica*	LC
Animalia	Chordata	Actinopterygii	Perciformes	Anabantidae	*Ctenopoma petherici*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Cyphomyrus psittacus*	LC
Animalia	Chordata	Actinopterygii	Cyprinodontiformes	Nothobranchiidae	*Epiplatys bifasciatus*	LC
Animalia	Chordata	Actinopterygii	Cyprinodontiformes	Nothobranchiidae	*Epiplatys spilargyreius*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Gymnarchidae	*Gymnarchus niloticus*	LC
Animalia	Chordata	Actinopterygii	Perciformes	Cichlidae	*Hemichromis fasciatus*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Hepsetidae	*Hepsetus odoe*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Clariidae	*Heterobranchus bidorsalis*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Clariidae	*Heterobranchus longifilis*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Arapaimidae	*Heterotis niloticus*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Hippopotamyrus pictus*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Hydrocynus brevis*	LC

Kingdom	Phylum	Class	Order	Family	Genus - species	IUCN status
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Hydrocynus forskahlii*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Hyperopisus bebe*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Labeo coubie*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Labeo parvus*	LC
Animalia	Chordata	Actinopterygii	Perciformes	Latidae	*Lates niloticus*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Malapteruridae	*Malapterurus electricus*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Malapteruridae	*Malapterurus minjiriya*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Marcusenius abadii*	NT
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Marcusenius senegalensis*	LC
Animalia	Chordata	Actinopterygii	Synbranchiformes	Mastacembelidae	*Mastacembelus nigromarginatus*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Micralestes pabrensis*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Mormyrops anguilloides*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Mormyrus hasselquistii*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Mormyrus macrophthalmus*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Distichodontidae	*Nannocharax ansorgii*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Distichodontidae	*Nannocharax fasciatus*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Distichodontidae	*Neolebias unifasciatus*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Schilbeidae	*Parailia pellucida*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Petrocephalus pallidomaculatus*	LC
Animalia	Chordata	Actinopterygii	Osteoglossiformes	Mormyridae	*Petrocephalus soudanensis*	LC
Animalia	Chordata	Actinopterygii	Cyprinodontiformes	Nothobranchiidae	*Pronothobranchius kiyawensis*	NT
Animalia	Chordata	Sarcopterygii	Lepidosireniformes	Protopteridae	*Protopterus annectens*	LC
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae	*Raiamas senegalensis*	LC
Animalia	Chordata	Actinopterygii	Characiformes	Alestidae	*Rhabdalestes septentrionalis*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Schilbeidae	*Schilbe intermedius*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Schilbeidae	*Schilbe mystus*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis arnoulti*	VU
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis batensoda*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis clarias*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis filamentosus*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis membranaceus*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis nigrita*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis ocellifer*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis schall*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis sorex*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis velifer*	LC
Animalia	Chordata	Actinopterygii	Siluriformes	Mochokidae	*Synodontis violaceus*	LC

APPENDIX D.LIST OF FLORA SPECIES RECORDED IN THE PWALUGU PROJECT STUDY AREA

Species	English Common Name	Class	Family	Life Form	IUCN Status
Asparagus africanus	African ssparagus	Liliopsida	Asparagaceae	Climber	NE
Asparagus warneckei	Warneck's asparagus	Liliopsida	Asparagaceae	Climber	NE
Cissus populnea		Magnoliopsida	Vitaceae	Climber	NE
Clerodendrum thyrsoideum		Magnoliopsida	Lamiaceae	Climber	NE
Ipomoea vagans		Magnoliopsida	Convolvulaceae	Climber	NE
Passiflora foetida		Magnoliopsida	Passifloraceae	Climber	NE
Paullinia pinnata		Magnoliopsida	Sapindaceae	Climber	NE
Triclisia patens		Magnoliopsida	Menispermaceae	Climber	NE
Aframomum elliotii		Liliopsida	Zingiberaceae	Herb	DD
Amorphophallus dracontioides		Liliopsida	Araceae	Herb	NE
Amorphophallus johnsonii		Liliopsida	Araceae	Herb	NE
Anchomanes difformis		Liliopsida	Araceae	Herb	NE
Boerhavia diffusa	Hog weed	Magnoliopsida	Nyctaginaceae	Herb	NE
Chlorophytum blepharophyllum		Liliopsida	Asparagaceae	Herb	NE
Crinum ornatum		Liliopsida	Amaryllidaceae	Herb	LC
Curculigo pilosa		Liliopsida	Hypoxidaceae	Herb	NE
Cyperus difformis	Smallflower umbrella sedge	Liliopsida	Cyperaceae	Herb	LC
Dactyloctenium aegyptium		Liliopsida	Poaceae	Herb	NE
Echinochloa stagnina		Liliopsida	Poaceae	Herb	LC
Euphorbia heterophylla		Magnoliopsida	Euphorbiaceae	Herb	NE
Imperata cylindrica	Cogon grass	Liliopsida	Poaceae	Herb	LC
Paspalum sp		Liliopsida	Poaceae	Herb	NE

Species	English Common Name	Class	Family	Life Form	IUCN Status
Pycreus lanceolatus		Liliopsida	Cyperaceae	Herb	LC
Scadoxus multiflorus		Liliopsida	Amaryllidaceae	Herb	NE
Setaria sp		Liliopsida	Poaceae	Herb	NE
Sorghum arundinaceum		Liliopsida	Poaceae	Herb	NE
Spigelia anthelmia		Magnoliopsida	Loganiaceae	Herb	NE
Stylochiton barteri		Liliopsida	Araceae	Herb	NE
Tacca leontopetaloides		Liliopsida	Taccaceae	Herb	LC
Trianthema portulacastrum		Magnoliopsida	Aizoaceae	Herb	NE
Arivela viscosa	spiderflower	Magnoliopsida	Cleomaceae	Shrub	NE
Asystasia calycina		Magnoliopsida	Acanthaceae	Shrub	NE
Chamaecrista mimosoides	Fish-bone Cassia	Magnoliopsida	Fabaceae	Shrub	LC
Crotalaria retusa	Rattleweed	Magnoliopsida	Fabaceae	Shrub	NE
Flueggea virosa		Magnoliopsida	Phyllanthaceae	Shrub	LC
Gardenia aqualla		Magnoliopsida	Rubiaceae	Shrub	NE
Gardenia ternifolia		Magnoliopsida	Rubiaceae	Shrub	LC
Grewia barteri		Magnoliopsida	Malvaceae	Shrub	NE
Grewia lasiodiscus		Magnoliopsida	Malvaceae	Shrub	LC
Grewia mollis		Magnoliopsida	Malvaceae	Shrub	NE
Gynandropsis gynandra		Magnoliopsida	Cleomaceae	Shrub	NE
Hyptis(Mesosphaerum) suaveolens		Magnoliopsida	Lamiaceae	Shrub	NE
Icacina senegalensis (oliviformis)		Magnoliopsida	Icacinaceae	Shrub	NE
Indigofera hirsuta		Magnoliopsida	Fabaceae	Shrub	NE
Mimosa pigra		Magnoliopsida	Fabaceae	Shrub	LC
Phyllanthus muellerianus		Magnoliopsida	Phyllanthaceae	Shrub	NE
Rourea coccinea		Magnoliopsida	Connaraceae	Shrub	NE
Senna obtusifolia	Coffeeweed	Magnoliopsida	Fabaceae	Shrub	NE

Species	English Common Name	Class	Family	Life Form	IUCN Status
Sida cordifolia		Magnoliopsida	Malvaceae	Shrub	NE
Sida linifolia		Magnoliopsida	Malvaceae	Shrub	NE
Waltheria indica		Magnoliopsida	Malvaceae	Shrub	NE
Ziziphus spina-christi		Magnoliopsida	Rhamnaceae	Shrub	NE
Acacia gourmaensis		Magnoliopsida	Fabaceae	Tree	LC
Acacia hockii	Shittim wood	Magnoliopsida	Fabaceae	Tree	NE
Acacia senegal	Gum arabic tree	Magnoliopsida	Fabaceae	Tree	NE
Acacia seyal	White galled acacia	Magnoliopsida	Fabaceae	Tree	LC
Adansonia digitata	Baobab	Magnoliopsida	Malvaceae	Tree	NE
Afzelia africana	African oak	Magnoliopsida	Fabaceae	Tree	VU
Albizia lebbeck	Rain tree, Lebbeck	Magnoliopsida	Fabaceae	Tree	NE
Annona senegalensis	Wild custard apple	Magnoliopsida	Annonaceae	Tree	LC
Anogeissus leiocarpus	African birch	Magnoliopsida	Combretaceae	Tree	LC
Azadirachta indica	Neem	Magnoliopsida	Meliaceae	Tree	LC
Balanites aegyptiaca	Thorn tree	Magnoliopsida	Zygophyllaceae	Tree	LC
Bombax costatum	Red kapok tree	Magnoliopsida	Malvaceae	Tree	LC
Borassus aethiopum	African fan palm	Liliopsida	Arecaceae	Tree	LC
Burkea africana		Magnoliopsida	Fabaceae	Tree	LC
Calotropis procera	Giant milkweed	Magnoliopsida	Apocynaceae	Tree	NE
Celtis toka		Magnoliopsida	Cannabaceae	Tree	NE
Cola laurifolia	laurel-leaved cola	Magnoliopsida	Malvaceae	Tree	LC
Combretum adenogonium		Magnoliopsida	Combretaceae	Tree	LC
Combretum collinum		Magnoliopsida	Combretaceae	Tree	LC
Combretum fragrans		Magnoliopsida	Combretaceae	Tree	NE
Combretum glutinosum		Magnoliopsida	Combretaceae	Tree	LC
Commiphora africana		Magnoliopsida	Burseraceae	Tree	LC
Crossopteryx febrifuga		Magnoliopsida	Rubiaceae	Tree	LC
Daniellia oliveri		Magnoliopsida	Fabaceae	Tree	LC

Species	English Common Name	Class	Family	Life Form	IUCN Status
Detarium microcarpum		Magnoliopsida	Fabaceae	Tree	LC
Diospyros abyssinica		Magnoliopsida	Ebenaceae	Tree	NE
Diospyros mespiliformis		Magnoliopsida	Ebenaceae	Tree	NE
Elaeis guineensis	African Oil Palm	Liliopsida	Arecaceae	Tree	LC
Entada africana		Magnoliopsida	Fabaceae	Tree	LC
Erythrophluem africanum		Magnoliopsida	Fabaceae	Tree	LC
Ficus asperifolia		Magnoliopsida	Moraceae	Tree	LC
Ficus platyphylla		Magnoliopsida	Moraceae	Tree	LC
Ficus polita		Magnoliopsida	Moraceae	Tree	NE
Haematostaphis barteri		Magnoliopsida	Anacardiaceae	Tree	NE
Hymenocardia acida		Magnoliopsida	Phyllanthaceae	Tree	LC
Jatropha curcas		Magnoliopsida	Euphorbiaceae	Tree	LC
khaya senegalensis	Dry-zone mahogany	Magnoliopsida	Meliaceae	Tree	VU
Lannea acida		Magnoliopsida	Anacardiaceae	Tree	LC
Lannea kerstingii		Magnoliopsida	Anacardiaceae	Tree	NE
Leucaena leucocephala		Magnoliopsida	Fabaceae	Tree	LR/CD
Lophira lanceolata		Magnoliopsida	Ochnaceae	Tree	NE
Maytenus (Gymnosporia) senegalensis	Red Spike-thorn	Magnoliopsida	Celestraceae	Tree	NE
Mitragyna inermis		Magnoliopsida	Rubiaceae	Tree	NE
Parkia biglobosa	African locust bean	Magnoliopsida	Fabaceae	Tree	LC
Piliostigma thonningii		Magnoliopsida	Fabaceae	Tree	NE
Pouteria alnifolia		Magnoliopsida	Sapotaceae	Tree	NE
Pseudocedrela kotschyi		Magnoliopsida	Meliaceae	Tree	LC
Pteleopsis suberosa		Magnoliopsida	Combretaceae	Tree	LC
Pterocarpus erinaceus	Rose Wood	Magnoliopsida	Fabaceae	Tree	EN
Pterocarpus santalinoides		Magnoliopsida	Fabaceae	Tree	LC
Quassia undulata		Magnoliopsida	Simaroubaceae	Tree	NE

Species	English Common Name	Class	Family	Life Form	IUCN Status
Ricinus communis		Magnoliopsida	Euphorbiaceae	Tree	NE
Sarcocephallus latifolius		Magnoliopsida	Rubiaceae	Tree	LC
Sclerocarya birrea		Magnoliopsida	Anacardiaceae	Tree	NE
Securidaca longepedunculata	Violet tree	Magnoliopsida	Polygalaceae	Tree	NE
Senegalia polyacantha		Magnoliopsida	Fabaceae	Tree	NE
Sterculia setigera		Magnoliopsida	Malvaceae	Tree	NE
Stereospermum kunthianum		Magnoliopsida	Bignoniaceae	Tree	LC
Strychnos innocua		Magnoliopsida	Loganiaceae	Tree	LC
Strychnos spinosa		Magnoliopsida	Loganiaceae	Tree	NE
Tamarindus indica	Indian Tamarind	Magnoliopsida	Fabaceae	Tree	LC
Tectona grandis	Teak	Magnoliopsida	Lamiaceae	Tree	NE
Terminalia avicennioides		Magnoliopsida	Combretaceae	Tree	LC
Terminalia laxiflora		Magnoliopsida	Combretaceae	Tree	LC
Terminalia macroptera		Magnoliopsida	Combretaceae	Tree	LC
Trema orientalis	Indian charcoal tree	Magnoliopsida	Cannabaceae	Tree	LC
Vitellaria paradoxa		Magnoliopsida	Sapotaceae	Tree	VU
Vitex chrysocarpa		Magnoliopsida	Lamiaceae	Tree	LC
Vitex doniana	Black plum	Magnoliopsida	Lamiaceae	Tree	LC
Vitex simplicifolia		Magnoliopsida	Lamiaceae	Tree	LC

APPENDIX E.COMPOSITE SPECIES LIST : SPECIES COMPOSITION AND ABUNDANCE LIST OF AVIFAUNA COMMUNITY

Species composition and abundance list of avifauna community in PMDP Catchment Area: (R – Resident, M – Intra-African Migrant, P – Palearctic migrant, c – common, f – fairly common, u – uncommon)

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Scopidae	*Scopus umbrette*	Hamerkop	Ru	2	1	6
Scopidae	*Dendrocygna viduata*	White-faced Whistling Duck	R/f	3	8	8
Accipitridae	*Meliarex metabates*	Dark Chanting Goshawk	R u	2	3	2
Accipitridae	*Circartus cinerascens*	Western Banded Snake Eagle	R u	1	5	0
Accipitridae	*Polemaetus bellicosus*	Marshal Eagle	R u	0	7	0
Accipitridae	*Aquila rapax*	Tawny Eagle	R /M u	0	7	0
Accipitridae	*Milvus migrans*	Yellow-billed Kite	M c	0	2	1
Accipitridae	*Butastur rufipennis*	Grasshopper Buzzard	M c	0	2	1
Accipitridae	*Kaupifalco monogrammicus*	Lizard Buzzard	R f/u	3	3	10
Accipitridae	*Buteo auguralis*	Red-necked Buzzard	R/Mf	0	3	0
Accipitridae	*Accipiter badius*	Shikra	R/Mf	0	3	1
Accipitridae	*Polyboroides typus*	African Harrier Hawk	Rc	1	0	3
Accipitridae	*Elanus caeruleus*	Black-shoulded kite	Rc	2	1	2
Falconidae	*Falco alopex*	Fox Kestrel	M u/f	1	11	0

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Phasianidae	*Ptilopachus petrosus.*	Stone Partridge	Ru	0	65	5
Phasianidae	*Francolinus bicalcaratus*	Double-spurred Francolin	Rc	16	26	24
Anhingida	*Anhinga rufa*	African Darter	R s/u	0	0	2
Ardeidae	*Ixobrychus minutus*	Little Bittern	R/P s/u	2	0	0
Ardeidae	*Butorides striatus*	Green-backed Heron	R c	3	13	4
Ardeidae	*Ardea purpurea*	Purple Heron	R/P f	0	0	1
Ardeidae	*Ardea melanocephala*	Black-headed Heron	R/M u	0	8	1
Rallidae	*Amauronus flavirostra*	Black Crake	R c	0	0	2
Rallidae	*Actophilonis africanus*	Africa Jacana	Rc	0	0	13
Rallidae	*Porphyrio alleni*	Allen's Gallinule	R/M u	0	0	3
Burhinidae	*Burhinus senegalensis*	Senegal Thick-knee	R M c	1	1	0
Glareolidae	*Pluvianus aegyptius*	Egyptian Plover	R M u	0	0	1
Charadriidae	*Vanellus senegallus*	African Wattled Lapwing	*Ru*	2	6	13
Charadriidae	*Vanellus spinosus*	Spur-winged Lapwing	R u	0	3	5
Charadriidae	*Vanellus tectus*	Black-headed Lapwing	R u	0	3	6
Charadriidae	*Treron calva*	African Green Pigeon	Rc	25	4	34
Charadriidae	*Treron waalia*	Bruces Green Pigeon	Rc	8	8	15
Charadriidae	*Turtur abyssinicus*	Black-billed Wood Dove	Rc	11	6	36
Charadriidae	*Tutur afer*	Blue-spotted Wood Dove	Rc	8	3	13

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Charadriidae	*Oena capensis*	Namaqua Dove	Mu	0	0	2
Charadriidae	*Columba guinea*	Speckled Pigeon	Ru	5	3	22
Charadriidae	*Columbia livia*	Rock Pigeon	R r	0	3	0
Charadriidae	*Streptopelia semitorquata*	Red-eyed Dove	Rc	16	6	49
Charadriidae	*Streptopelia decipiens*	African Mourning Dove	R r	8	0	5
Charadriidae	*Streptopelia vinacea*	Vinaceous Dove	Rc	60	5	65
Charadriidae	*Streptopelia senegalensis*	Laughing Dove	Rc	13	5	46
Psittacidae	*Poicephalus senegalus*	Senegal Parrot	Rc	12	29	41
Psittacidae	*Psittacula krameri*	Rose-ringed Parakeet	Ru	17	8	7
Musophagidae	*Musophaga violacea*	Violet Turaco	Ru	43	17	5
Musophagidae	*Crinifer piscator*	Western Grey Plantain-eater	Rc	28	21	47
Cuculidae	*Chrysococcyx klaas*	Klaas's Cuckoo	*R/Mf*	12	2	4
Cuculidae	*Chrysococcyx caprius*	Didric cuckoo	R/Mc	8	2	13
Cuculidae	*Oxylophus levaillantii*	Levailliant's Cuckoo	M f/u	3	2	4
Cuculidae	*Oxylophus Jacobinus*	Jacobin Cuckoo	M u	2	1	5
Cuculidae	*Cuculus gularis*	Africa Cuckoo	M u/f	1	0	5
Cuculidae	*Centropus senegalensis*	Senegal Coucal	R c	3	5	24
Cuculidae	*Centropus grillii*	Black Coucal	M u/s	2	4	14
Strigidae	*Otus senegalensis*	African Scops Owl	R f	0	0	1

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Strigidae	*Ptilopsis leucotis*	Northern White-faced Owl	R u/f	0	2	1
Strigidae	*Caprimulgus climacurus*	Long-tailed Nightjar	R/ m f	0	2	2
Strigidae	*Macrodipteryx longipennis*	Standard-winged Nightjar	M f/c	0	4	1
Apodidae	*Cypsiurus parvus*	African Palm Swift	R c	5	19	10
Apodidae	*Apus affinis*	Little Swift	R c	0	12	0
Apodidae	*Psalidoprocne nitens*	Fanti Saw-wing	R f	0	13	0
Apodidae	*Telacanthura ussheri*	Mottled Spinetail	R u/s	0	8	0
Apodidae	*Ptyonoprogne fuligula*	Rock Martin	R f	0	1	0
Alcedinidae	*Alcedo cristata*	Malachite Kingfisher	R c	2	3	1
Alcedinidae	*Ceryle rudis*	Pied Kingfisher	R c	0	0	2
Alcedinidae	*Halcyon senegalense*	Woodland Kingfisher	R/Mc	6	3	2
Alcedinidae	*Halcyon leucocephala*	Grey-headed Kingfisher	Rf	2	2	1
Alcedinidae	*Halcyon malimbica*	Blue-breasted Kingfisher	Rf	8	0	0
Alcedinidae	*Halcyon chelicuti*	Stripped Kingfisher	R/M f/u	3	5	0
Meropidae	*Merops bulocki*	Red-throated Bee-eater	R c	19	4	6
Meropidae	*Merops hirundineus*	Swallow-tailed Bee-eater	R/ M u	18	0	0
Meropidae	*Merops nubicus*	Northern Carmine Bee eater	M c	9	6	3
Meropidae	*Merops pusillus*	Little Bee-eater	R / M c	0	0	3
Coraciidae	*Coracias naevius*	Rufous-crowned Roller	M/R u	3	3	4

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Coraciidae	*Coracias cyanogaster*	Blue-bellied Roller	R/M u/f	4	8	5
Coraciidae	*Coracias abyssinicus*	Abyssinian Roller	M f/c	0	4	9
Coraciidae	*Eurystomus glaucurus*	Broadbill Roller	M f/c	4	0	2
Phoeniculidae	*Phoeniculus purpureus*	Green Wood-hoopoe	R c	9	0	2
Phoeniculidae	*Rhinopomastus aterrimus*	Black Scimitarbill	Ru	9	1	5
Phoeniculidae	*Apaloderma narina*	Narina Trogon	R u	13	0	0
Bucerotidae	*Tockus erythrorhynchus*	Red-billed Hornbill	R u	30	34	57
Bucerotidae	*Tockus nasutus*	African Grey Hornbill	M/R c	24	20	30
Capitonidae	*Pogoniulus chrysoconus*	Yellow-fronted Tinkerbird	R c	11	9	14
Capitonidae	*Lybius vieilloti*	Vieillot's Barbet	R u	12	8	24
Capitonidae	*Lybius dubius*	Bearded Barbet	R u	6	6	0
Indicatoridae	*Indicator indicator*	Greater Honeyguide	R u	8	4	0
Indicatoridae	*Indicator minor*	Lesser Honeyguide	Ru	2	2	0
Picidae	*Dendropicos goertae*	Grey Woodpecker	R f/c	8	1	0
Picidae	*Campethera punctuligera*	Fine Spotted Woodpecker	R f	2	0	0
Alaudidae	*Eremopterix leucotis*	Chestnut-backed Sparrow Lark	Mc	9	6	12
Hirundinidae	*Hirundo senegalensis*	Mosque Swallow	R /M f	0	5	4
Hirundinidae	*Hirundo smithii*	Wire-tailed Swallow	R u/f	28	5	10
Hirundinidae	*Hirundo lucida*	Red-chested Swallow	R /M f	0	25	0

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Hirundinidae	*Cecropis abyssinica*	Lesser-striped Swallow	M c/f	4	9	0
Hirundinidae	*Cecropis semirufa*	Rufous-chested Swallow	R /M f	0	27	0
Campephagidae	*Coracina pectoralis*	White-breasted Cuckoo-shrike	R u	7	0	0
Pycnonotidae	*Pycnonotus barbatus*	Common Bulbul	Rc	23	20	31
Pycnonotidae	*Chlorocichla flavicollis*	Yellow-throated Leaflove	R u/s	13	0	0
Turdidae	*Cossypha albicapilla*	White-crowned Robin Chat	R u	4	7	2
Turdidae	*Cossypha niveicapilla*	Snowy-crowned Robin Chat	R f/c	10	5	5
Turdidae	*Turdus pelios*	African Thrush	R c	5	8	7
Turdidae	*Cercomela familiaris*	Familier Chat	R u	0	14	0
Turdidae	*Thamnolaea cinnamomeiventris*	Mocking Cliff Chat	R c	0	13	0
Turdidae	*Myrmecocichla albifrons*	White-fronted Black Chat	R u	9	6	0
Sylviidae	*Melocichla mentalis*	African Moustached Warbler	Ru	7	5	8
Sylviidae	*Cisticola cantans*	Singing Cisticola	U	4	19	6
Sylviidae	*Cisticola natalensis*	Croaking Cisticola	*Rc*	3	10	8
Sylviidae	*Cisticola dorsti*	Dorst's Cisticola	R u	5	8	9
Sylviidae	*Cisticula erythrops*	Red-faced Cisticula	R c/f	2	4	7
Sylviidae	*Cisticula galactotes*	Winding Cisticola	R f	2	9	3
Sylviidae	*Cisticula aberrans*	Rock Loving Cisticula	R c/f	0	7	0
Sylviidae	*Cisticula juncidis*	Zitting Cisticula	R f	0	2	0

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Sylviidae	*Cisticula rufus*	Rufous Cisticula	R u/f	4	0	0
Sylviidae	*Cisticula brachypterus*	Short-wing Cisticula	R c	2	0	0
Sylviidae	*Prinia subflava*	Tawny-flanked Prinia	Rc	11	13	129
Sylviidae	*Apalis flavida*	Yellow-breasted Apalis	Ru	9	0	0
Sylviidae	*Camaroptera brachyura*	Grey-backed Cameroptera	Rc	26	20	31
Sylviidae	*Hypergerus atriceps*	Oriole Warbler	R u	8	4	15
Sylviidae	*Eremomela pusilla*	Senegal Eremomela	Rc	38	17	43
Sylviidae	*Sylvietta brachyura*	Northern Crombec	Rc	7	8	6
Sylviidae	*Heliolais erythropterus*	Red-winged Warbler	R f / u	0	6	0
Muscicapidae	*Melaenornis edolioides*	Northern Black Flycatcher	Rc	7	4	3
Muscicapidae	*Melaenornis pallidus*	Pale Flycatcher	R c	0	0	2
Muscicapidae	*Muscicapa gambagae*	Gambaga Flycatcher	R s	0	6	0
Muscicapidae	*Myioparus plumbeus*	Lead Coloured Flycatcher	*R s/u*	10	0	0
monarchidae	*Elminia longicauda*	African Blue Flycatcher	R f	14	0	1
monarchidae	*Terpsiphone viridis*	African Paradise Flycatcher	R / m c	16	7	12
Platysteiridae	*Platysteira cyanea*	Common Wattle-eye	Rc	12	6	5
Platysteiridae	*Batis senegalensis*	Senegal Batis	Ru	11	10	3
Timaliidae	*Turdiodes reinvwardtii*	Blackcap Babbler	Rf	12	13	9
Timaliidae	*Turdoides plebejus*	Brown Babbler	Rf	28	8	17

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Ramizidae	*Anthoscopus pervulus*	Yellow Penduline Tit	R u	5	2	0
Paridae	*Parus (leucomelas) guineensis*	White-shouldered Black Tit	R f/c	8	7	0
Nectariniidae	*Anthreptes longuemarei*	Western Violet-backed Sunbird	Rs	10	0	0
Nectariniidae	*Chalcomitra senegalensis*	Scarlet-chested Sunbird	Rc	25	17	29
Nectariniidae	*Cinnyris caccinigastrus*	Splended Sunbird	R f/u	4	0	0
Nectariniidae	*Hedydipna platura*	Pygmy Sunbird	Mf	11	3	5
Nectariniidae	*Cinnyris pulchellus*	Beautiful Sunbird	R/m c	14	10	23
Nectariniidae	*Cinnyris cupreus*	Copper Sunbird	Rc	3	1	0
Zosteropidae	*Zosterops senegalensis*	Yellow White-eye	Rc	23	7	15
Laniidae	*Corvinella corvina*	Yellow-billed Shrike	Rc	10	9	20
Malaconotidae	*Malaconotus blanchoti*	Grey-headed Bush-shrike	Rf	10	5	2
Malaconotidae	*Malaconotus sulfureopectus*	Sulphur-breasted Bush-shrike	Rf	4	4	1
Malaconotidae	*Tchagra senegala*	Black-crowned Tchagra	R c	11	9	11
Malaconotidae	*Dryoscopus gambensis*	Northern Puffback	Fc	9	7	10
Malaconotidae	*Laniarius barbarus*	Yellow-crowned Gonolek	Rc	19	14	28
Malaconotidae	*Nilaus afer*	Brubru	R/f	6	6	5
Prionopidae	*Prionops plumatus*	White Helmet-shrike	R/f	28	20	7
Oriolidae	*Oriolus auratus*	African Golden Oriole	M f/c	10	9	14
Dicruridae	*Dicrurus adsimilis*	Fork-tailed Drongo	Rc	10	15	10

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Corvidae	*Corvus albus*	Pied Crow	Rc	3	4	0
Corvidae	*Ptilostomus afer*	Piapiac	R f/c	17	18	0
Sturnidae	*Lamprotornispurpureus*	Bronze-tailed Glossy Starling	R/M u/f	14	0	0
Sturnidae	*Lamprotornis purpureus*	Purple Glossy Starling	R M / c	5	5	21
Sturnidae	*Lamprotornis chalybaeus*	Greater Blue-eared Starling	Ms	13	0	20
Sturnidae	*Lamprotornis chloropterus*	Lesser Blue-eared Starling	R c/f	9	0	7
Sturnidae	*Lamprotornis caudatus*	Long-tailed Glossy Starling	R/m u	19	12	33
Sturnidae	*Lamprotornis pulcher*	Chestnut-bellied Starling	M s	2	7	20
Buphagidae	*Buphagus africanus*	Yellow-billed Oxpecker	*Ru*	0	0	1
Passeridae	*Passer griseus*	Northern Grey-headed Sparrow	*Rc*	8	6	46
Passeridae	*Petronia dentata*	Bush Petronia	*R/M c*	8	9	26
Ploceidae	*Ploceus nigricollis*	Black-necked Weaver	Ru	3	0	29
Ploceidae	*Plocepasser superciliosus*	Chestnut-crowned Sparrow Weaver	R u	2	0	2
Ploceidae	*Ploceus cucullatus*	Village Weaver	*Rc*	43	0	171
Ploceidae	*Ploceus luteolus*	little Weaver	R f/c	6	3	24
Ploceidae	*Quelea erythrops*	Red-headed Quelea	M c	72	13	902
Ploceidae	*Quelea quelea*	Red-billed Quelea	Mc	40	3	751
Ploceidae	*Euplectes macroura*	Yellow-mantled Widowbird	Rc	0	0	21
Ploceidae	*Euplectes hordeaceus*	Black-winged Bishop	Rc	62	2	345

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Ploceidae	*Euplectes franciscanus*	Northern Red Bishop	Rc	150	23	543
Estrildidae	*Pytilia phoenicoptera*	Red-winged Pytilia	Ru	6	4	2
Estrildidae	*Lagonosticta rufopicta*	Bar-breasted Firefinch	Rc	9	2	185
Estrildidae	*Lagonosticta senegala*	Red-billed Firefinch	Rc	26	19	30
Estrildidae	*Lagonosticta rara*	Black-bellied Firefinch	Rc	13	9	26
Estrildidae	*Lagonosticta larvata*	Black-faced Firefinch	Rc	0	4	0
Estrildidae	*Estrilda caerulescens*	Lavender Waxbill	Rc	6	4	28
Estrildidae	*Estrilda melpoda*	Orange-cheeked Waxbill	*Rc*	16	30	60
Estrildidae	*Estrilda troglodytes*	Black-rumped Waxbill	R u	13	27	62
Estrildidae	*Uraeginthus bengalus*	Red-cheeked Cordon-bleu	Rc	40	25	68
Estrildidae	*Ortygospiza atricollis*	Black-faced Quailfinch	R u	0	0	8
Estrildidae	*Lonchura cucullata*	Bronze Mannikin	Rc	28	22	51
Viduidae	*Anomalospiza imberbis*	Cuckoo Finch	Rr	0	0	2
Viduidae	*Vidua chalybeata*	Village Indigobird	R c	6	2	6
Viduidae	*Vidua wilsoni*	Wilson's Indigobird	R c	4	4	2
Viduidae	*Vidua larvaticola*	Barka Indigobird	R u	1	0	0
Viduidae	*Vidua macroura*	Pin-tailed Whydah	R c	12	37	39
Viduidae	*Vidua interjecta*	Exclamatory Paradise Whydah	R u	1	0	0
Viduidae	*Vidua togoensis*	Togo Paradise Whydah	R s	1	0	0

Family	*Scientific Names*	Common Names	Status	Gallery	Rocky	Degraded
Fringillidae	*Serinus mozambicus*	Yellow-fronted Canary	R c	23	32	48
Emberizidae	*Emberiza tahapisi*	Cinnamon-breasted Rock Bunting	R/M u	0	5	2
Emberizidae	*Emberiza affinis*	Brown-rumped Bunting	R u	0	4	0

APPENDIX F. PROTECTION SCHEDULES OF BIRDS RECORDED (WILDLIFE CONSERVATION REGULATION L.I 685)

(R – Resident, M – Intra-African Migrant, P – Palearctic migrant, c – common, f – fairly common, u – uncommon, Wp = Wholly protected; IBA = Important Bird Areas reference species)

Scientific Names	Common Names	Status	Wildlife Conservation Regulation
Scopus umbretta	Hamerkop	Ru	
Dendrocygna viduata	White-faced Whistling Duck	R/f	
Meliarex metabates	Dark Chanting Goshawk	R u	wp
Circartus cinerascens	Western Banded Snake Eagle	R u	wp
Polemaetus bellicosus	Marshal Eagle	R u	wp
Aquila rapax	Tawny Eagle	R /M u	wp
Milvus migrans	Yellow-billed Kite	M c	wp
Butastur rufipennis	Grasshopper Buzzard	M c	wp
Kaupifalco monogrammicus	Lizard Buzzard	R f/u	wp
Buteo auguralis	Red-necked Buzzard	R/Mf	wp
Accipiter badius	Shikra	R/Mf	wp
Polyboroides typus	African Harrier Hawk	Rc	wp
Elanus caeruleus	Black-shoulded kite	Rc	wp
Falco alopex	Fox Kestrel	M u/f	wp
Ptilopachus petrosus.	Stone Partridge	Ru	
Francolinus bicalcaratus	Double-spurred Francolin	Rc	
Anhinga rufa	African Darter	R s/u	
Ixobrychus minutus	Little Bittern	R/P s/u	
Butorides striatus	Green-backed Heron	R c	
Ardea purpurea	Purple Heron	R/P f	wp
Ardea melanocephala	Black-headed Heron	R/M u	wp
Amauronus flavirostra	Black Crake	R c	
Actophilonis africanus	Africa Jacana	Rc	

Scientific Names	Common Names	Status	Wildlife Conservation Regulation
Porphyrio alleni	Allen's Gallinule	R/M u	
Burhinus senegalensis	Senegal Thick-knee	R M c	
Pluvianus aegyptius	Egyptian Plover	R M u	
Vanellus senegallus	African Wattled Lapwing	Ru	
Vanellus spinosus	Spur-winged Lapwing	R u	
Vanellus tectus	Black-headed Lapwing	R u	
Treron calva	African Green Pigeon	Rc	
Treron waalia	Bruces Green Pigeon	Rc	
Turtur abyssinicus	Black-billed Wood Dove	Rc	
Tutur afer	Blue-spotted Wood Dove	Rc	
Oena capensis	Namaqua Dove	Mu	
Columba guinea	Speckled Pigeon	Ru	
Columbia livia	Rock Pigeon	R r	
Streptopelia semitorquata	Red-eyed Dove	Rc	
Streptopelia decipiens	African Mourning Dove	R r	
Streptopelia vinacea	Vinaceous Dove	Rc	
Streptopelia senegalensis	Laughing Dove	Rc	
Poicephalus senegalus	Senegal Parrot	Rc	IBA
Psittacula krameri	Rose-ringed Parakeet	Ru	
Musophaga violacea	Violet Turaco	Ru	IBA
Crinifer piscator	Western Grey Plantain-eater	Rc	
Chrysococcyx klaas	Klaas's Cuckoo	R/Mf	
Chrysococcyx caprius	Didric cuckoo	R/Mc	
Oxylophus levaillantii	Levailliant's Cuckoo	M f/u	
Oxylophus Jacobinus	Jacobin Cuckoo	M u	
Cuculus gularis	Africa Cuckoo	M u/f	
Ceuthmochares aereus	Yellowbill	Rc	
Centropus senegalensis	Senegal Coucal	R c	
Centropus grillii	Black Coucal	M u/s	

Scientific Names	Common Names	Status	Wildlife Conservation Regulation
Otus senegalensis	African Scops Owl	R f	
Ptilopsis leucotis	Northern White-faced Owl	R u/f	
Caprimulgus climacurus	Long-tailed Nightjar	R/ m f	
Macrodipteryx longipennis	Standard-winged Nightjar	M f/c	
Cypsiurus parvus	African Palm Swift	R c	
Apus affinis	Little Swift	R c	
Psalidoprocne nitens	Fanti Saw-wing	R f	
Telacanthura ussheri	Mottled Spinetail	R u/s	
Ptyonoprogne fuligula	Rock Martin	R f	
Alcedo cristata	Malachite Kingfisher	R c	
Ceryle rudis	Pied Kingfisher	R c	
Halcyon senegalense	Woodland Kingfisher	R/Mc	
Halcyon leucocephala	Grey-headed Kingfisher	Rf	
Halcyon malimbica	Blue-breasted Kingfisher	Rf	
Halcyon chelicuti	Stripped Kingfisher	R/M f/u	
Merops bulocki	Red-throated Bee-eater	R c	
Merops hirundineus	Swallow-tailed Bee-eater	R/ M u	
Merops nubicus	Northern Carmine Bee eater	M c	
Merops pusillus	Little Bee-eater	R / M c	
Coracias naevius	Rufous-crowned Roller	M/R u	
Coracias cyanogaster	Blue-bellied Roller	R/M u/f	
Coracias abyssinicus	Abyssinian Roller	M f/c	
Eurystomus glaucurus	Broadbill Roller	M f/c	
Phoeniculus purpureus	Green Wood-hoopoe	R c	
Rhinopomastus aterrimus	Black Scimitarbill	Ru	
Apaloderma narina	Narina Trogon	R u	
Tockus erythrorhynchus	Red-billed Hornbill	R u	
Tockus nasutus	African Grey Hornbill	M/R c	
Pogoniulus chrysoconus	Yellow-fronted Tinkerbird	R c	

Scientific Names	Common Names	Status	Wildlife Conservation Regulation
Lybius vieilloti	Vieillot's Barbet	R u	
Lybius dubius	Bearded Barbet	R u	IBA
Indicator indicator	Greater Honeyguide	R u	
Indicator minor	Lesser Honeyguide	Ru	
Dendropicos goertae	Grey Woodpecker	R f/c	
Campethera punctuligera	Fine Spotted Woodpecker	R f	
Eremopterix leucotis	Chestnut-backed Sparrow Lark	Mc	
Hirundo senegalensis	Mosque Swallow	R /M f	
Hirundo smithii	Wire-tailed Swallow	R u/f	
Hirundo lucida	Red-chested Swallow	R /M f	
Cecropis abyssinica	Lesser-striped Swallow	M c/f	
Cecropis semirufa	Rufous-chested Swallow	R /M f	
Coracina pectoralis	White-breasted Cuckoo-shrike	R u	
Pycnonotus barbatus	Common Bulbul	Rc	
Chlorocichla flavicollis	Yellow-throated Leaflove	R u/s	
Cossypha albicapilla	White-crowned Robin Chat	R u	
Cossypha niveicapilla	Snowy-crowned Robin Chat	R f/c	
Turdus pelios	African Thrush	R c	
Cercomela familiaris	Familier Chat	R u	
Thamnolaea cinnamomeiventris	Mocking Cliff Chat	R c	
Myrmecocichla albifrons	White-fronted Black Chat	R u	
Melocichla mentalis	African Moustached Warbler	Ru	
Cisticola cantans	Singing Cisticola	U	
Cisticola natalensis	Croaking Cisticola	Rc	
Cisticola dorsti	Dorst's Cisticola	R u	
Cisticula erythrops	Red-faced Cisticula	R c/f	
Cisticula galactotes	Winding Cisticola	R f	
Cisticula aberrans	Rock Loving Cisticula	R c/f	
Cisticula juncidis	Zitting Cisticula	R f	

Scientific Names	Common Names	Status	Wildlife Conservation Regulation
Cisticula rufus	Rufous Cisticula	R u/f	
Cisticula brachypterus	Short-wing Cisticula	R c	
Prinia subflava	Tawny-flanked Prinia	Rc	
Apalis flavida	Yellow-breasted Apalis	Ru	
Camaroptera brachyura	Grey-backed Cameroptera	Rc	
Hypergerus atriceps	Oriole Warbler	R u	
Eremomela pusilla	Senegal Eremomela	Rc	IBA
Sylvietta brachyura	Northern Crombec	Rc	
Heliolais erythropterus	Red-winged Warbler	R f / u	
Melaenornis edolioides	Northern Black Flycatcher	Rc	
Melaenornis pallidus	Pale Flycatcher	R c	
Muscicapa gambagae	Gambaga Flycatcher	R s	IBA
Myioparus plumbeus	Lead Coloured Flycatcher	R s/u	
Elminia longicauda	African Blue Flycatcher	R f	
Terpsiphone viridis	African Paradise Flycatcher	R / m c	
Platysteira cyanea	Common Wattle-eye	Rc	
Batis senegalensis	Senegal Batis	Ru	
Turdiodes reinvwardtii	Blackcap Babbler	Rf	
Turdoides plebejus	Brown Babbler	Rf	
Anthoscopus pervulus	Yellow Penduline Tit	R u	
Parus (leucomelas) guineensis	White-shouldered Black Tit	R f/c	
Anthreptes longuemarei	Western Violet-backed Sunbird	Rs	
Chalcomitra senegalensis	Scarlet-chested Sunbird	Rc	
Cinnyris caccinigastrus	Splended Sunbird	R f/u	
Hedydipna platura	Pygmy Sunbird	Mf	
Cinnyris pulchellus	Beautiful Sunbird	R/m c	
Cinnyris cupreus	Copper Sunbird	Rc	
Zosterops senegalensis	Yellow White-eye	Rc	
Corvinella corvina	Yellow-billed Shrike	Rc	IBA

Scientific Names	Common Names	Status	Wildlife Conservation Regulation
Malaconotus blanchoti	Grey-headed Bush-shrike	Rf	
Malaconotus sulfureopectus	Sulphur-breasted Bush-shrike	Rf	
Tchagra senegala	Black-crowned Tchagra	R c	
Dryoscopus gambensis	Northern Puffback	fc	
Laniarius barbarus	Yellow-crowned Gonolek	Rc	
Nilaus afer	Brubru	R/f	
Prionops plumatus	White Helmet-shrike	R/f	
Oriolus auratus	African Golden Oriole	M f/c	
Dicrurus adsimilis	Fork-tailed Drongo	Rc	
Corvus albus	Pied Crow	Rc	
Ptilostomus afer	Piapiac	R f/c	
Lamprotornispurpureus	Bronze-tailed Glossy Starling	R/M u/f	
Lamprotornis purpureus	Purple Glossy Starling	R M / c	
Lamprotornis chalybaeus	Greater Blue-eared Starling	Ms	
Lamprotornis chloropterus	Lesser Blue-eared Starling	R c/f	
Lamprotornis caudatus	Long-tailed Glossy Starling	R/m u	
Lamprotornis pulcher	Chestnut-bellied Starling	M s	
Buphagus africanus	Yellow-billed Oxpecker	Ru	
Passer griseus	Northern Grey-headed Sparrow	Rc	
Petronia dentata	Bush Petronia	R/M c	IBA
Ploceus nigricollis	Black-necked Weaver	Ru	
Plocepasser superciliosus	Chestnut-crowned Sparrow Weaver	R u	
Ploceus cucullatus	Village Weaver	Rc	
Ploceus luteolus	little Weaver	R f/c	
Quelea erythrops	Red-headed Quelea	M c	
Quelea quelea	Red-billed Quelea	Mc	
Euplectes macroura	Yellow-mantled Widowbird	Rc	
Euplectes hordeaceus	Black-winged Bishop	Rc	
Euplectes franciscanus	Northern Red Bishop	Rc	

Scientific Names	Common Names	Status	Wildlife Conservation Regulation
Pytilia phoenicoptera	Red-winged Pytilia	Ru	
Lagonosticta rufopicta	Bar-breasted Firefinch	Rc	
Lagonosticta senegala	Red-billed Firefinch	Rc	
Lagonosticta rara	Black-bellied Firefinch	Rc	
Lagonosticta larvata	Black-faced Firefinch	Rc	
Estrilda caerulescens	Lavender Waxbill	Rc	
Estrilda melpoda	Orange-cheeked Waxbill	Rc	
Estrilda troglodytes	Black-rumped Waxbill	R u	
Uraeginthus bengalus	Red-cheeked Cordon-bleu	Rc	
Ortygospiza atricollis	Black-faced Quailfinch	R u	
Lonchura cucullata	Bronze Mannikin	Rc	
Anomalospiza imberbis	Cuckoo Finch	Rr	
Vidua chalybeata	Village Indigobird	R c	
Vidua wilsoni	Wilson's Indigobird	R c	
Vidua larvaticola	Barka Indigobird	R u	
Vidua macroura	Pin-tailed Whydah	R c	
Vidua interjecta	Exclamatory Paradise Whydah	R u	
Vidua togoensis	Togo Paradise Whydah	R s	
Serinus mozambicus	Yellow-fronted Canary	R c	
Emberiza tahapisi	Cinnamon-breasted Rock Bunting	R/M u	
Emberiza affinis	Brown-rumped Bunting	R u	

APPENDIX G.ABUNDANCE AND OCCURRENCE OF FISH

G.1. Abundance of fish at the various stations

Site and station	Gear type	Species	Number of catches	Total wt	Effort (hr)	CPUE (num./hr)	Min T L (cm)	Max TL (cm	Min Wt. (g)	Max Wt. (g)
Mishio	Set net	*Synodontis senegalensis*	21	1.29	15	1.4	14.0	20.5	0.02	0.08
		S. ocelifer	21	0.14	15	0.27	11.5	12.9	0.02	0.06
		Auchenoglanis ocelifer	4	0.14	15	0.07	-	19.1	-	0.06
		Oreochromis niloticus	1	0.06	15	0.07	-	19.1	-	0.06
		Schibe mystus	4	0.31	15	0.27	11.9	22.2	0.01	0.22
		Clarias angularis	3	0.78	15	0.07	-	25.0	-	0.06
		Polypterus bichir	1	0.06	15	0.07	-	25.0	-	0.06
		P. senegalus	1	0.06	15	0.07	-	20.2	-	0.06
		Mormyrus delicosus	1	0.02	15	0.07	-	30.4	-	0.02
		Hyperopisus bebe	1	0.04	15	0.07	-	20.2	-	0.04
		Gnathonemus senegalensis	11	0.36	15	0.73	9.9	18.9	0.01	0.06
		Bycinus nurse	2	0.06	15	0.13	16.2	16.2	0.02	0.02
		Marcuenius harringtoni	1	0.06	15	0.07	-	20.8	-	17.9
Kpasinkpe	Set net	*Syndontis senegalensis*	18	1.46	18	1	16.0	29.0	0.02	0.26
		Syndontis	6	0.36	18	0.33	16.5	20.5	0.04	0.08
		S. clarias	1	0.34	18	0.06	-	34.2	-	0.34
		S. schall	5	0.58	18	0.28	19.5	25.2	0.08	0.18
		Schibe mystus	27	2.72	18	1.50	17.0	28.5	0.04	0.22
		Brycinus nurse	7	0.42	18	0.39	13.9	18.0	0.04	0.08

Site and station	Gear type	Species	Number of catches	Total wt	Effort (hr)	CPUE (num./hr)	Min T L (cm)	Max TL (cm	Min Wt. (g)	Max Wt. (g)
		Mormyrus deliciosus	6	1.24	18	0.03	28.5	35.6	0.16	0.34
		Labeo senegalensis	2	1.0	18	0.11	31.2	35.5	0.30	0.38
		Polypterus senegalensis	2	1.0	18	0.11	42.5	43.5	0.44	0.56
		Perrocephalus bovei	3	0.13	18	0.17	10.7	13.5	0.01	0.06
		Gnathonemus tamandua	1	0.16	18	0.06	-	25.6	-	0.16
		Citharinus citharus	2	0.26	16	0.13	20.2	21.1	0.122	0.014
		Labeo coubie	2	0.94	16	0.13	34.0	36.0	0.46	0.48
		Heterotis niloticus	1	0.86	16	0.063	-	45.9	-	0.86
		Labeo senegalensis	1	0.30	16	0.063	-	30.0	-	0.30
		Bagrus bayad	1	0.22	16	0.063	-	30.9	-	0.22
		Synodontis schall	1	0.22	16	0.063	-	27.7	-	0.22
		S. clarias	1	0.28	16	0.063	-	34.2	-	0.28
		Mormyrus deliciosus	1	0.30	16	0.063	-	36.5	-	0.30
		Gnathonemus tamandua	1	0.48	16	0.063	-	42.8	-	0.48
		Clarias anquillaris	1	1.42	16	0.063	-	59.7	-	1.42
	Trap net	*Bagrus bayad*	1	0.76	12	0.083	-	50.2	-	0.76
		Clarias anguilaris	2	2.12	12	0.17	32.1	65.1	0.24	1.88
		Mormyrus delicious	2	0.98	12	0.17	40.0	43.9	0.36	0.62
		Hyperopisus occidentalis	1	0.10	12	0.083	-	28.0	-	0.10
		G. tamandua	2	0.18	12	0.17	25.1	28.2	0.08	0.10
		Auchenoglais occidentalis	1	0.42	12	0.083	-	34.0	-	0.42

Site and station	Gear type	Species	Number of catches	Total wt	Effort (hr)	CPUE (num./hr)	Min T L (cm)	Max TL (cm	Min Wt. (g)	Max Wt. (g)
		Syndontis schall	3	0.42	12	0.25	24.2	27.1	0.10	0.18
		S. clarias	2	0.20	12	0.17	21.8	23.0	0.08	0.12
		Distichodus rostratus	1	0.10	12	0.083	-	22.2	-	0.10
		Oreochromis niloticus	1	0.08	12	0.083		19.3	-	0.08
Sariba	Set net	*Brycinus nurse*	7	0.40	14	0.50	14.2	18.5	0.02	0.08
		Schilbe mystus	3	2.8	14	0.214	20.5	21.8	0.8	1.0
		Synodontis clarias	6	5.0	14	0.43	14.0	17.2	0.8	1.0
		S. eupterus	1	0.8	14	0.071		15.5	-	0.8
		Malapterurus electricus	1	8.0	14	0.071		38.5	-	8.0
		Hyperopisus bebe	1	1.0	14	0.071		23.8	-	1.0
		Clarias anguilaris	1	20.8	14	0.071		64.9	-	20.8
		Labeo senegelensis	1	4.7	14	0.071		28.2	-	4.7
		Malapterurus electricus	1	8.8	14	0.071		40.5	-	8.8
		M. electricus	2	8.6	14	0.142	18.9	35.9	1.0	7.6
		Labeo senegalensis	1	2.4	14	0.071		24.9	-	2.4
		Synodontis schall	1	8.4	14	0.071		41.0	-	8.4
		Hyperopisus bebe	5	9.6	14	0.36	26.2	33.2	1.6	2.2
		Schilbe mystus	3	1.9	14	0.0214	14.0	24.2	0.1	1.0
		Synodontis clarias	5	1.9	14	0.36	10.9	16.8	0.3	0.6
		S. oceliffer	1	0.3	14	0.071		12.2	-	0.3
		Mormyrus deliciosus	1	0.2	14	0.071		16.8	-	0.2
		Brycinus nurse	2	0.4	14	0.142	8.2	8.7		0.2

Site and station	Gear type	Species	Number of catches	Total wt	Effort (hr)	CPUE (num./hr)	Min T L (cm)	Max TL (cm	Min Wt. (g)	Max Wt. (g)
	Entangle net	*Labeo senegalensis*	20	31.2	14	1.43	18.2	30.5	0.4	2.8
		Synodontis eupterus	12	16	14	0.86	18.3	23.2	1.0	1.6
		S. nigrita	13	16.4	14	0.93	18.2	25.5	1.0	1.8
		Brycinus nurse	13	5.3	14	0.93	14.5	17.2	0.2	0.6
		S. nigrita	15	1.46	14	1.07	15.5	19.2	0.04	0.14
		Bagrus bayad	1	0.14	14	0.071		27.2		0.14
		S. nigrita	24	1.22	14	1.71	12.5	20.5	0.02	0.12
		Malapterurus electricus	2	0.88	14	0.142	103	130.2	0.42	0.46
Digaari	Seine net	*Labeo coubie*	2	6	13	0.154	29	48	2	4
		G. tamandua	1	2.15	13	0.077		26	-	2.15
		G. senegalensis	2	4.5	13	0.154	34	36.5	-	2.25
		Malapterurus harringtoni	1	2	13	0.077		21	-	2
		Synodontis clarias	2	5	13	0.154	28.5	30	2	3
		Brycinus nurse	2	4.2	13	0.154	34	34.3	-	2.1
		Eutropius niloticus	1	0.10	13	0.077	-	19	-	0.10
		Hepsetus odoe	1	1.5	13	0.077	-	50.8	-	1.5
		Bagrus bayad	1	0.1	13	0.077	-	20.15	-	0.1
Suhuluga	Trap net	*Synodontis clarias*	52	-	13	4	13.1	24.5	-	-
		Malapterurus delicious	2	-	13	0.155	30.0	34.0	-	-
		G. tamandua	2	-	13	0.154	22.7	24.5	-	-
		Hepsetus odoe	1	-	13	0.077		49.0	-	-
		Malapterurus electricus	5	-	13	0.38	31.5	38.2	-	-

Site and station	Gear type	Species	Number of catches	Total wt	Effort (hr)	CPUE (num./hr)	Min T L (cm)	Max TL (cm	Min Wt. (g)	Max Wt. (g)
		Heterobranchus bayad	1	-	13	0.077		60.0	-	-
		Labeo coubie	1	-	13	0.077	-	40.8	-	-
		L. senegelensis	6	-	13	0.462	20.3	30.4	-	-
		Brycinus nurse	3	-	13	0.23	16.6	19.0	-	-
		Hyperopisus bebe	12	-	13	0.923	24.2	31.1	-	-
		G. tamandua	1	-	13	0.077	-	21.4	-	-
		Labeo senegalensis	4	-	13	0.038	15.5	33.2	-	-
		Brycinus nurse	1	-	13	0.077	-	13.6	-	-
		Schilbe mystus	6	-	13	0.061	17.5	25.4	-	-
		Bagrus bayad	1	-	13	0.077	-	39.2	-	-
		Malapterurus electricus	4	-	13	0.308	15.7	50.6	-	-
Nungu	Hook and line	*Synodontis clarias*	22	2.6	1	2.6	-	-	-	-
	Set net	*Synodontis clarias*	3	0.82	2.5	0.33	-	-	-	-
		Gnathonemus tamandua	6	0.386	1.25	0.309	-	-	-	-
	Hands and cutlass	*Heterobranchus bidorsalis*	32	3.15	1	3.15	-	-	-	-

G.2. Occurrence of Fish Species in Catch and from Community Interviews

SPECIES IN CATCH	SITE/ STATION IN INTERVIEW	PRESENCE IN CATCH	PRESENCE BY INTERVIEW
Synodontis senegalensis	Mishio	Y	Y
S. ocelifer	Mishio	Y	Y
Auchenoglanis ocelifer	Mishio	Y	Y
Oreochromis niloticus	Mishio	Y	Y
Schilbe mystus	Mishio	Y	Y
Clarias anguillaris	Mishio	Y	Y
Polypterus bichir	Mishio	Y	Y
P. senegalensis	Mishio	Y	Y
Mormyrus deliciosus	Mishio	Y	Y
Hyperopisus bebe	Mishio	Y	Y
G. senegalensis	Mishio	Y	Y
Brycinus nurse	Mishio	Y	Y
Marcusenius harringtoni	Mishio	Y	Y
Synodontis senegalensis	Kpasinkpe	Y	Y
Auchenoglanis ocelifer	Kpasinkpe	Y	Y
Synodontis clarias	Kpasinkpe	Y	Y
S. schall	Kpasinkpe	Y	Y
Schilbe mystus	Kpasinkpe	Y	Y
Brycinus nurse	Kpasinkpe	Y	Y
Mormyrus deliciosus	Kpasinkpe	Y	Y
Labeo senegalensis	Kpasinkpe	Y	Y
Polypterus senegalensis	Kpasinkpe	Y	Y
Petrocephalus bovei	Kpasinkpe	Y	Y
G. tamandua	Kpasinkpe	Y	Y
Polypterus bichir	Kpasinkpe	N	N

SPECIES IN CATCH	SITE/ STATION IN INTERVIEW	PRESENCE IN CATCH	PRESENCE BY INTERVIEW
Hepsetus odoe	Kpasinkpe	N	N
Hydrocyon forskali	Kpasinkpe	N	N
Heterotis niloticus	Kpasinkpe	N	N
Mormyrus macrophthalmus	Kpasinkpe	Y	Y
Gymnarchus niloticus	Kpasinkpe	N	N
Hydrocynus vittatus	Kpasinkpe	Y	Y
Alestes macrolepidotus	Kpasinkpe	N	N
Alestes baremose	Kpasinkpe	N	N
Alestes nurse	Kpasinkpe	N	N
Citharinus citharus	Kpasinkpe	Y	Y
Labeo coubie	Kpasinkpe	Y	Y
Eutropius niloticus	Kpasinkpe	N	N
Bagrus bayad	Kpasinkpe	Y	Y
Clarotes laticeps	Kpasinkpe	N	N
Chrysichthys nigrodigitatus	Kpasinkpe	N	N
Synodontis eupterus	Kpasinkpe	Y	Y
Synodontis ocellifer	Kpasinkpe	Y	Y
Synodontis filamentosus	Kpasinkpe	Y	Y
Brycinus nurse	Sariba	Y	Y
Schilbe mystus	Sariba	Y	Y
Synodontis clarias	Sariba	Y	Y
S. eupterus	Sariba	Y	Y
Malapterurus electricus	Sariba	Y	Y
Hyperopisus bebe	Sariba	Y	Y
Clarias anguillaris	Sariba	Y	Y
Labeo senegalensis	Sariba	Y	Y
Malapterurus electricus	Sariba	Y	Y
Synodontis ocelifer	Sariba	Y	Y

SPECIES IN CATCH	SITE/ STATION IN INTERVIEW	PRESENCE IN CATCH	PRESENCE BY INTERVIEW
Mormyrus delicious	Sariba	Y	Y
Brycinus nurse	Sariba	Y	Y
Labeo Senegalensis	Sariba	Y	Y
Synodontis eupterus	Sariba	Y	Y
S. nigrita	Sariba	Y	Y
Brycinus nurse	Sariba	Y	Y
Synodontis nigrita	Sariba	Y	Y
Bagrus bayad	Sariba	Y	Y
S. nigrita	Sariba	Y	Y
Polyterus senegalensis	Sariba	Y	Y
Heterotis niloticus	Pwalugu	N	N
Mormyrus macropthalmus	Pwalugu	N	N
Gymnarchus niloticus	Pwalugu	N	N
Hydrocynus vitatus	Pwalugu	N	N
Brycinus macrolepidotus	Pwalugu	N	N
Hydrocrynus nurse	Pwalugu	N	N
Citharinus citharus	Pwalugu	Y	Y
Labeo senegalensis	Pwalugu	Y	Y
L. coubie	Pwalugu	Y	Y
Eutropius niloticus	Pwalugu	N	N
Bagrus bayad	Pwalugu	Y	Y
Clarotes laticeps	Pwalugu	N	N
Auchenoglanis occidentalis	Pwalugu	Y	Y
Synodontis clarias	Pwalugu	Y	Y
S. eupterus	Pwalugu	Y	Y
S. ocelifer	Pwalugu	Y	Y
S. filamentosus	Pwalugu	N	N
S. gabroni	Pwalugu	N	N

SPECIES IN CATCH	SITE/ STATION IN INTERVIEW	PRESENCE IN CATCH	PRESENCE BY INTERVIEW
Malapterurus electricus	Pwalugu	Y	Y
Lates niloticus	Pwalugu	N	N
Tilapia galilaeus	Pwalugu	N	N
T. niloticus	Pwalugu	N	N
T. aurea	Pwalugu	N	N
T. zillii	Pwalugu	N	N
Labeo coubie	Digaari	Y	Y
G. tamandua	Digaari	Y	Y
G. senegalensis	Digaari	Y	Y
Mormyrus harringtoni	Digaari	Y	Y
Synodontis Clarias	Digaari	Y	Y
Brycinus nurse	Digaari	Y	Y
Eutropius niloticus	Digaari	Y	Y
Bagrus bayad	Digaari	Y	Y
Hepsetus odoe	Digaari	Y	Y
Polypterus senegalensis	Digaari	N	N
Heterotis niloticus	Digaari	N	N
Momyrus Macropthalmus	Digaari	N	N
Gymnarchus niloticus	Digaari	N	N
Hydrocyon vittatus	Digaari	N	N
Brycinus macrolepidotus	Digaari	N	N
Brycinus baremose	Digaari	N	N
B. nurse	Digaari	Y	N
Citharinus citharus	Digaari	Y	Y
Labeo Senegalensis	Digaari	N	N
L. coubie	Digaari	Y	Y
Eutropus niloticus	Digaari	N	N
Bagrus bayad	Digaari	Y	Y

SPECIES IN CATCH	SITE/ STATION IN INTERVIEW	PRESENCE IN CATCH	PRESENCE BY INTERVIEW
Clarotes laticeps	Digaari	N	N
Chrysicthys nigrodigitatus	Digaari	N	N
Auchenoglanis occidentalis	Digaari	N	N
Synodontis clarias	Digaari	Y	Y
S. eupterus	Digaari	Y	Y
S. ocellifer	Digaari	Y	Y
S. fidamentosus	Digaari	N	N
S. gobroni	Digaari	N	N
S. nigrita	Digaari	Y	Y
Malapterus electricus	Digaari	Y	Y
Lates niloticus	Digaari	N	N
Tilapia galilaues	Digaari	N	N
T. niloticus	Digaari	N	N
T. aurea	Digaari	N	N
T. zillii	Digaari	N	N
Chaana obscura	Digaari	N	N
Tetraodon fahaka	Digaari	N	N
Hemichromis bimaculatus	Digaari	N	N
H. fasciatus	Digaari	N	N
Epiplatys sexfasciatus	Digaari	N	N
Hepsetus odoe	Suhuluya	Y	Y
Malapterurus electricus	Suhuluya	Y	Y
Heterobranchus bayad	Suhuluya	Y	Y
Auchenoglanis occidentalis	Suhuluya	Y	Y
Labeo coubie	Suhuluya	Y	Y
L. senegalensis	Suhuluya	Y	Y
Brycinus nurse	Suhuluya	Y	Y
Schilbe mystus	Suhuluya	Y	Y
Mormyrus macrophthalmus	Suhuluya	Y	Y

SPECIES IN CATCH	SITE/ STATION IN INTERVIEW	PRESENCE IN CATCH	PRESENCE BY INTERVIEW
Polypterus senegalensis	Suhuluya	Y	Y
Heterotis citharus	Suhuluya	Y	Y
Citharinus citharus	Suhuluya	Y	Y
Marcusenius harringtoni	Suhuluya	Y	Y
Synodontis clarias	Nungu	Y	Y
Gnathonemus tamandua	Nungu	Y	Y
Heterobranchus bidorsalis	Nungu	N	N
Petrocephalus sirunus	Kusanaba	N	N
Hydrocyon forskali	Kusanaba	N	N
H. brevis	Kusanaba	N	N
Polypterus senegalensis	Kusanaba	Y	Y
Heterotis niloticus	Kusanaba	Y	Y
Mormyrus deliciosus	Kusanaba	Y	Y
Hydrocyon vittatus	Kusanaba	N	N
Brycinus spp.	Kusanaba	N	N
Citharanus citharus	Kusanaba	Y	Y
Lates niloticus	Kusanaba	N	N
Schilbe mystus	Kusanaba	Y	Y
Labeo senegalensis	Kusanaba	Y	Y
Brycinus nurse	Kusanaba	Y	Y
Clarias anguillaris	Kusanaba	Y	Y
Synodontis senegalensis	Kusanaba	Y	Y
S. clarias	Kusanaba	Y	Y
Gnathonemus tamandua	Kusanaba	Y	Y
Mormyrus deliciosus	Kusanaba	Y	Y
Gnathonemus cyprinoides	Kusanaba	Y	Y
Marcusenius harrringtoni	Kusanaba	Y	Y
Brycinus nurse	Kusanaba	Y	Y

SPECIES IN CATCH	SITE/ STATION IN INTERVIEW	PRESENCE IN CATCH	PRESENCE BY INTERVIEW
Labeo coubie	Kusanaba	Y	Y
Eutropius niloticus	Kusanaba	N	N
Bagrus bayad	Kusanaba	Y	Y
Clarotes laticeps	Kusanaba	N	N
Chrysichthys migrodigitatus	Kusanaba	N	N
Auchenoglanis occidentalis	Kusanaba	Y	Y
Tilapia niloticus	Kusanaba	N	N
Tilapia aurea	Kusanaba	Y	Y
Tilapia zilli	Kusanaba	N	N
Channa obscura	Kusanaba	N	N
Tetraodon fahaka	Kusanaba	Y	Y
Synodontis gobroni	Kusanaba	Y	Y
S. nigrita	Kusanaba	Y	Y
Malapterurus electricus	Kusanaba	Y	Y
Lates niloticus	Kusanaba	N	N
Tilapia galilaea	Kusanaba	N	N
Synodontis claris	Kusanaba	Y	Y
S. eupterus	Kusanaba	Y	Y
S. ocellifer	Kusanaba	Y	Y
S. filamentous	Kusanaba	Y	Y
Pantodon buchholzi	Kusanaba	N	N
Hemichromis bimaculatus	Kusanaba	N	N

APPENDIX H.CENSUS SURVEY & VILLAGE HEADS QUESTIONNAIRES

H.1. Census survey questionnaire

Census Survey Questionnaire - Pwalugu

image

Hi, my name is .....This household survey is being administered to households in communities within and boarding the proposed Pwalugu Multipurpose Dam Project footprint including yours. This information will be used by VRA to better understand how people in the area of their operation live, and as a baseline of data which can be used to monitor changes in community well-being over time. The information gathered will also be used to develop programs for communities and household that may be displaced or are affected by the Project.

Your participation is voluntary, and any information you share with us will be treated with STRICT CONFIDENCE. Results will be compiled in such a way that no individual household is identified. This survey will take about 30 minutes, and I would like to start with some general questions about your household. We thank you for your cooperation

- ○ OK

1.0 INTERVIEW IDENTIFICATION

INTERVIEWER NAME

- ○ Toffby Quarshie
- ○ David Ametepe
- ○ Rita Ackah
- ○ Isaac Agyeman Prempeh
- ○ Dominic Agyeman-Mensah
- ○ Kelvin Obeng
- ○ Daniel Boafor Dadzie
- ○ Albert Amponsah Akuoko
- ○ Alitu Abdul-Fahad
- ○ Mohammed Ibrahim
- ○ Joseph Naabe
- ○ user5
- ○ user6
- ○ user7
- ○ user8
- ○ user9
- ○ user10

Region

- ○ North east region
- ○ Upper east region

District

Community

1. INTERVIEW IDENTIFICATION

Phone number of respondent

_____

Type of ID card

- ○ NHIS
- ○ Voter ID
- ○ Passport
- ○ Drivers License
- ○ Ghana Card
- ○ Not Available/None

ID card number

Household/House ID

if available

Who is the respondent?

- ○ Head of Household
- ○ Spouse to Head of Household
- ○ Son/Daughter of Head of Household
- ○ Another member of the Household
- ○ Neighbour of Head of Household
- ○ Others (specify)

Please specify other relation

INTERVIEW IDENTIFICATION

1..2.1 First name of respondent

1.2.1 Last name of respondent

INTERVIEW IDENTIFICATION

1..2.3 First name of the head of the household

1.2.4 Last name of the head of the household

1.3 What is the household head gender?

- Male
- Female

1.4 How many wives does he have?

INTERVIEW IDENTIFICATION

1.5 Head of Household ethnicity

Mole Dagbani ethnic group is made up of five sub cultures; Mamprusi, Mossi, Dagomba, Nanumba, and the Gonja

- Talensi
- Frafra
- Mole Dagbani
- Nabdan
- Kusasi
- Bimoba
- Kokomba
- Others (specify)

INTERVIEW IDENTIFICATION

Specify other ethnicity

1.6 Head of Households religion

- christian
- muslim
- traditional
- atheist
- Others (specify)

INTERVIEW IDENTIFICATION

Specify other religion

1.7 How many people (adults and children) live in this household

People leaving more than 6 months a year in the house

1.8 For how many years has the household been living in this locality?

- ○ Less than 1 year
- ○ Between 1 and 5 years
- ○ Between 5 and 10 years
- ○ Between 10 and 20 years
- ○ More than 20 years

1.9 Why did the Head of Household come to this place

- ○ Farming
- ○ Fishing
- ○ Galamsey
- ○ Native of the area
- ○ Others (specify)

Please specify other relation

_____

I would like some information regarding all members of this household (children and adults) who were living here during all or part of last six months. This includes those members of the household who are away today but who normally live here. Could you please answer the following questions, starting with yourself & then moving from the oldest to the youngest household Member?

- ○ OK

1.10 HOUSEHOLD ROASTER AND DEMOGRAPHIC INFORMATION

Household size is

How many people live in this household?
Including the respondent

_____

» Household member names

» Household Roaster and Demographic Information

2.0 HOUSEHOLD UTILITIES AND FACILITIES

ENERGY ACCESS

2.1 Which ONE of the following is the energy source used most frequently for electricity by your household?

- none
- power grid
- batteries
- solar panels
- generator
- Other (specify)

Please specify others

2.2 Which ONEof the following is the energy source used most frequently for lighting by your household

- None
- Kerosene Lamp
- Electricity national grid
- Electricity (generator)
- Candle
- Flashlight/Torch
- Firewood
- Other (specify)

Please specify others

2.3 Which ONE of the following is the energy source used most frequently for cooking by your household

- Firewood
- Charcoal
- Kerosene
- Crop residue
- Saw dust
- Animal waste
- Gas
- Other (specify)

Please specify others

Where does Household use for cooking

- ○ Enclosure with roof
- ○ Structure with roof but without walls
- ○ Open space in compound
- ○ Other (specify)

others specify

WATER ACCESS

2.4 Where does your household get water for drinking

more than one answer may be given

- ☐ Public Borehole
- ☐ Private borehole
- ☐ Private tap at home
- ☐ Rain water
- ☐ Dugout/pond
- ☐ Public Well
- ☐ Private well
- ☐ River/stream
- ☐ Sachet
- ☐ Other (specify)

Please specify others

2.5 Where does your household get its water for other domestic use

more than one answer may be given

- ☐ Public Borehole
- ☐ Private borehole
- ☐ Private tap at home
- ☐ Rain water
- ☐ Dugout/pond
- ☐ Public Well
- ☐ Private well
- ☐ River/stream
- ☐ Other (specify)

Please specify others

SANITATION

2.6 What is the main type of toilet facility available to this household

- ○ No toilet (Bush/field)
- ○ Pit latrine
- ○ KVIP (Kumasi Ventilated Improved Pit)
- ○ Indoor toilet with septic tank
- ○ Other (Specify)

Please specify others

2.6a What is the main type of bathing facility available to this household

- ○ own bathroom inside house
- ○ private open cubicle
- ○ shared open cubicle
- ○ open space around house
- ○ river/pond/dam
- ○ others

others specify

2.6b How does your household dispose of refuse

- ○ Public dump (Open space)
- ○ Burnt
- ○ Buried
- ○ Piled up/Collected
- ○ Dumped indiscriminately
- ○ Others (specify)

others specify

EQUIPMENT

2.7 Which of the following household items are available (in working condition) for use by your household

Please list all assets owned by the household

- ☐ Bicycle
- ☐ Cell phone
- ☐ Radio
- ☐ Television set/DVD player
- ☐ CD Player/Sound System
- ☐ Sewing machine
- ☐ Motor cycle
- ☐ Tricycle
- ☐ Milling machine
- ☐ Car/truck
- ☐ Refrigerator/deep freezer
- ☐ Foam mattress
- ☐ Gas/electric stove or cooker
- ☐ Furniture suite (cushion)
- ☐ Electric iron
- ☐ Donkey
- ☐ Plough
- ☐ Tractor
- ☐ Water pump
- ☐ Computer/Laptop
- ☐ Others (specify)

Please specify others

HOUSEHOLD ACCOMODATION

2.7a What type of dwelling does your household live in

- ○ detached house (bungalow/self contained)
- ○ semi-detached house
- ○ house/buildings (different compound)
- ○ improvised homes (wooden structures, kiosks etc)
- ○ compound house

2.8 How many years ago was this accomodation constructed

- Less than 1 year
- between 1 and 5 years
- between 5 and 10 years
- between 10 and 20 years
- more than 20 years

2.9 What is your occupancy status

- Owned
- Rented with monetary rent
- Rented in kind
- Rented without charge/for free
- Other (specify)

Please specify others

2.10 How many rooms does your household occupy?

2.11 What is the primary construction material of the outer walls of your main building

- Mud bricks/Earth
- Wooden slabs
- Cement block/concrete
- Metal sheets/Slate
- Burnt bricks
- Other (specify)

Please specify others

2.12 What is the primary construction material of the roof of your main building

- Mud/mud bricks/Earth
- Thatch
- Metal sheet
- Wood
- Rubber/Felt
- Slate/Asbestos
- Other (specify)

Please specify others

2.13 What is the primary construction material of the floor of your main building?

- ○ Earth
- ○ Cement
- ○ Wood
- ○ Terrazzo
- ○ Tiles
- ○ Others (specify)

Please specify others

2.14 What other structures can be found on your homestead

- ☐ Kitchen
- ☐ Pen
- ☐ Hencoop
- ☐ Toilet
- ☐ Bathroom
- ☐ Other (specify)

Please specify others

3.0: AGRICULTURE AND LAND USE

3.1 Does your household have access to farmland in the expropriation area that you use for cultivation/farming

- ○ yes
- ○ no

3.1.1 Main crop grown on land

- ☐ Millet
- ☐ Sorghum
- ☐ Maize
- ☐ Rice
- ☐ Groundnut
- ☐ Vegetables
- ☐ Sweet potato
- ☐ Frafra potato
- ☐ Yam
- ☐ Water melon
- ☐ Soy Beans
- ☐ Beans
- ☐ Okro
- ☐ Tomatoes
- ☐ Other (specify)

Other crop on farm

_____

Millet farm size

- ○ small
- ○ medium
- ○ large

Sorghum farm size

- ○ small
- ○ medium
- ○ large

Maize farm size

- ○ small
- ○ medium
- ○ large

Rice farm size

- small
- medium
- large

Groundnut farm size

- small
- medium
- large

Vegetables farm size

- small
- medium
- large

Sweet potato farm size

- small
- medium
- large

Frafra potato farm size

- small
- medium
- large

Yam farm size

- small
- medium
- large

Water melon farm size

- small
- medium
- large

Soy Beans farm size

- small
- medium
- large

Beans farm size

- small
- medium
- large

Okro farm size

- small
- medium
- large

Tomatoes farm size

- small
- medium
- large

Other crop on farm size

- small
- medium
- large

Farm distance (km from homestead)

_____

Ownership or Land tenure rights

- Belongs to household
- Rents from another h/hold
- Sharecrop with landowner
- Other

Please specify others

_____

Years household has been farming on this land

_____

Amount harvested (Millet)
In Ghana Cedis

_____

Amount harvested (Sorghum)
In Ghana Cedis

_____

Amount harvested (Maize)
In Ghana Cedis

_____

Amount harvested (Rice)
In Ghana Cedis

_____

Amount harvested (Groundnut)
In Ghana Cedis

_____

Amount harvested (Vegetables)
In Ghana Cedis

_____

Amount harvested (Sweet potato)
In Ghana Cedis

_____

Amount harvested (Frafra potato)
In Ghana Cedis

_____

Amount harvested (Yam)
In Ghana Cedis

_____

Amount harvested (Water melon)
In Ghana Cedis

_____

Amount harvested (Soy beans)
In Ghana Cedis

_____

Amount harvested (Beans)
In Ghana Cedis

_____

Amount harvested (Okro)
In Ghana Cedis

_____

Amount harvested (Tomatoes)
In Ghana Cedis

_____

Amount harvested (others)
In Ghana Cedis

_____

Proportion used for household consumption (Millet)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Sorghum)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Maize)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Rice)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Groundnut)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Vegetables)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Sweet potato)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Frafra potato)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Yam)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Water melon)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Soy beans)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Beans)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (Okro)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (tomatoes)

- all
- less than half
- half
- more than half
- none

Proportion used for household consumption (others)

- all
- less than half
- half
- more than half
- none

3.1.3 Do you have employees?

- yes
- no

3.1.4 If YES, how many?

_____

3.2 What livestock does your household have?
more than one answer may be given

- ☐ No livestock
- ☐ Goat
- ☐ Sheep
- ☐ Pigs
- ☐ Cattle
- ☐ Chickens/poultry (duck, guinea fowl)
- ☐ Donkey
- ☐ Others (specify)

Please specify other livestock you own

_____

3.2a Number of livestock your household have on average over the year

How many Goats do you have

_____

How many sheeps do you have

_____

How many pigs do you have

_____

How many cattles do you have

_____

How many chickens/poultry (duck, guinea fowl) do you have

_____

How many donkey's do you have

_____

Other livestock number

_____

3.2.1 Which tree products do you pick/harvest?

more than one answer may be given

- ☐ none
- ☐ fruits/nuts
- ☐ wood
- ☐ leaves
- ☐ roots
- ☐ others

Please specify others

_____

3.3 In the past 12 months, did the granary (grains storehouse) of the household go empty

- ○ yes
- ○ no

IF YES(to ques. 3.3), why did you not produce enough

- ☐ Flood/heavy rains prevented early cultivation
- ☐ Drought
- ☐ Pest/rodents destroyed the farm
- ☐ Improper farm maintenance
- ☐ Poor soil fertility
- ☐ Poor yield
- ☐ Others (specify)

Please specify others

_____

On average, how many meals per day does your household have during the dry season

_____

On average, how many meals per day does your household have during the wet season

_____

Does this household have access to farmland within the project affected area and gives it out to somebody else

- ○ yes
- ○ no

IF YES(to ques. 3.9), please provide details as follows:

How many people do you give out farm land for cultivation within the project affected area?

_____

» Name of person using farm land

» IF YES(to ques. 3.9), please provide details as follows:

4.0: INCOME AND EXPENDITURE

4.1.1 What one source earned the household the biggest income last year

- Livestock
- Crop farming
- Fishing
- Shea nuts
- Petty trading
- Artisanal work (tailoring, capentary etc)
- Remittance
- Renting (accommodation)
- Salary
- Galamsey

4.1.2 What was the second source of monetary of the household last year?

- Livestock
- Crop farming
- Fishing
- Shea nuts
- Petty trading
- Artisanal work
- Remittance
- Renting (accommodation)
- Salary
- Galamsey
- None

4.2 Which expenditure had the most impact on your family last year?

- Food
- Housing
- Utility
- Education
- Health
- Transport
- Funeral (s)
- Dowry
- Clothes
- Hire of labor/farm maintenance
- Labour, Fishing gears
- Remittances
- Agricultural inputs
- Others (specify)

Please specify others

4.3 Does your household have cash savings

- yes
- no

4.4 Does your household currently have a loan

- yes
- no

4.4.1 YES(to ques. 4.4, what organization/institution loaned your household the money

- Bank
- Micro-finance institution
- Family
- NGO
- Mobile Money Services
- Other (specify)

Please specify others

4.5 During the past one year did your household benefit from any agricultural or social welfare support scheme

- ○ yes
- ○ no

4.5.1 IF YES(to ques. 4.7), specify the programs

more than one answer may be given

- ☐ Free/subsidized seeds/seedlings
- ☐ Free/subsidized fertilizer or other farm inputs
- ☐ Dugout for irrigation
- ☐ Livelihood Empowerment Against Poverty (LEAP)
- ☐ Ghana School Feeding Programme (GSF
- ☐ National Health Insurance Scheme (NHI
- ☐ National Youth Employment Program (NYEP)
- ☐ Free Senior High School Program
- ☐ Other (specify)

Please specify others

_____

4.6 If your households is short of money, what do you do

multiple responses allowed

- ☐ sell property
- ☐ Sell livestock
- ☐ ask relatives
- ☐ borrow from neighbours
- ☐ borrow lending facility/ banks
- ☐ Informal lending facility
- ☐ other

Please specify others

_____

4.7 During the last one year, did anyone from your household leave this village (even for few days) due to lack of availability of work opportunity within the village

- ○ yes
- ○ no

6.6 How are the vulnerable people taken care of

vulnerable include aged above 70yrs, physically challenged, orphans etc

- ○ health/medical support
- ○ feeding
- ○ social support
- ○ education

6.7 Who takes care of the vulnerable

- ○ community
- ○ family
- ○ NGO
- ○ government

5.0: HEALTH

5.2 Which of the following disease did you or any member of your household suffer from in the past six month?

Tick all that apply

- ☐ Malaria
- ☐ Cough/lung problem
- ☐ Diarrhea
- ☐ Skin infection
- ☐ Sexually transmitted disease
- ☐ Eye disease
- ☐ Cholera
- ☐ Fever
- ☐ Typhoid
- ☐ Back/waist pains
- ☐ Birth complications (women)
- ☐ Meningitis/CSM
- ☐ Others (specify)

Please specify others

_____

5.3 Has any child ever died in this household

- ○ yes
- ○ no

5.4 Age of child

Tick all that apply

- ☐ child under 5 years
- ☐ child over 5 years

5.0: HEALTH

5.4 Number of death (child under 5 years)

_____

5.4 Number of death (child over 5 years)

_____

5.5 What is the first point of call for treatment when a family member falls sick?

- ○ Government Health Institution
- ○ Private Health Institution
- ○ Chemical shop/Pharmacy
- ○ Traditional Healer
- ○ Herbal Treatment
- ○ Faith/Religious healers
- ○ Self medication

5.6 Do you wash your hands with water and soap after visiting the toilet?

- ○ yes
- ○ no

5.7 Has any member of your household given birth in the last 12 months

- ○ yes
- ○ no

5.8 If yes, what was the outcome of birth

- ○ alive
- ○ died at birth
- ○ died within 7 days after birth

5.12 How many members of your household (%) are covered by the National Health Insurance Scheme?

what percentage has access

_____

Household size is

5.13 For those not covered, please tell me why they are not covered

please ignore if all members are covered (100%)

- ○ My card had expired/yet to renew
- ○ Lack of money/too expensive
- ○ Poor quality of service
- ○ No one has contacted me about the scheme
- ○ Difficult/cumbersome registration process
- ○ Others (specify)

Please specify others

5.14 Please indicate whether you or another member of your household belongs to one of these organizations

choose all that apply

- ☐ Farmer's Association
- ☐ Development Committee
- ☐ Youth group
- ☐ Women's group
- ☐ Trade Association
- ☐ Other (specify)

Please specify others

6.0: CRIMES, SAFETY AND SECURITY

CRIMES, SAFETY AND SECURITY

In the past 12 months, have you or any of your household members been a victim of a violent crime such as rape or robbery or mugging

- ○ yes
- ○ no

How safe do members of your household feel from crime

- Safe
- Very safe
- Not safe

7.0: PROJECT INFORMATION AND OPINION

6.1 Are you aware of the proposed Pwalugu Multipurpose Dam Project?

- yes
- no

6.2 If YES, how did you find out about the Project?

- radio
- television
- political meeting
- authorities (region/district)
- VRA/NEDCo
- SRC
- others

others specify

_____

6.3 In your opinion, what are the social and environmental aspect that will be positively impacted by the project?

- economic activities
- employment
- education
- health care
- safety
- poverty

6.4 In your opinion, what are the social and environmental aspect that will be negatively impacted by the project?

- ○ house and land ownership
- ○ housing
- ○ traffic jams
- ○ accidents
- ○ economic activities
- ○ air pollution
- ○ noise

6.5 What are your proposal to minimize the effect of negative impact

_____

Location for GPS

where are you taking the GPS

- ○ Home
- ○ Farm

Collect the GPS location of Respondents Household Location?

Make sure the GPS is turned on

_____

latitude (x.y °)

_____

longitude (x.y °)

_____

altitude (m)

_____

précision (m)

_____

You are at the end of the task - you can swipe back through the form to check your answers. If all answers are correct then swipe forward to save the form. THANK YOU

H.2. Village heads questionnaire

Village Heads Questionnaire - Pwalugu

image

INTERVIEWER NAME

_____

Region

- ○ North east region
- ○ Upper east region

District

Community

VILLAGE QUESTIONNAIRE - Dedicated to HEADS OF SETTLEMENTS ONLY

1. SURVEY INFORMATION

Q1.1. Village ID number

_____

Q1.2. Date

yyyy-mm-dd

_____

1. SURVEY INFORMATION

Q1.5. Electoral Area

_____

Q1.6. Type of Area

- ○ rural
- ○ urban
- ○ periurban

2. VILLAGE HISTORY AND TRADITIONAL LEADER

Q2.1. Name of Head of Village

First name, Middle name, Last name

_____

Q2.2. Title of Head of village

- ○ Paramount Chief
- ○ Local Chief
- ○ Tindana

Q2.3. How many years have you held this position

years

_____

2. VILLAGE HISTORY AND TRADITIONAL LEADER

Q2.3a How many years has this village existed

years

_____

q2.3b What is the origin and history of the village

_____

2. VILLAGE HISTORY AND TRADITIONAL LEADER

Q2.4. How many advisors are assisting you

_____

Q2.5. How many are women

_____

Q3.1. Have you been informed about the Pwalugu Dam Project?

- ○ Yes
- ○ No

3. LEVEL OF PROJECT INFORMATION

Q3.2. In what year

_____

Q3.3. How did you find out about the Project?

- radio
- television
- political meeting
- authorities (region/district)
- VRA (Volta River Authority)
- SRC
- others

3. LEVEL OF PROJECT INFORMATION

Q3.3.1 Specify others

Q3.4. What was the purpose of this consultation

---

4. EXTENT OF THE COMMUNITY'S TERRITORY

Q4.1. Draw the boundaries of the community on the map.

Q4.2. Indicate the names of the surrounding communities:

1

2

3

4

5

6

7

8

9

10

5. SOCIO-DEMOGRAPHIC DATA

Q5.1. Number of houses

Q5.2. Number of Households

Q5.3. Number of permanent inhabitants

5. SOCIO-DEMOGRAPHIC DATA

Q5.4. Number of inhabitants

Q5.5. Number of non-permanent inhabitants

5. SOCIO-DEMOGRAPHIC DATA

Q5.6. Age distribution of population (0 - 5 years)
IN PERCENTAGES (%)

Q5.6. Age distribution of population (6 - 16 years)
IN PERCENTAGES (%)

Q5.6. Age distribution of population (17 - 35 years)
IN PERCENTAGES (%)

_____

Q5.6. Age distribution of population (36 - 57 years)
IN PERCENTAGES (%)

_____

Q5.6. Age distribution of population (60+ years)
IN PERCENTAGES (%)

_____

5. SOCIO-DEMOGRAPHIC DATA

Q5.7. Population trends over the last 5 years

- ○ decreased
- ○ stable
- ○ increased

Q5.8. Current migration situation in relation to your area

- ○ Immigration > Emigration
- ○ Immigration = Emigration
- ○ Immigration < Emigration

5. SOCIO-DEMOGRAPHIC DATA

Q5.9. What is the gender distribution of the population? (Males)
IN PERCENTAGES (%)

_____

Q5.9. What is the gender distribution of the population? (Females)
IN PERCENTAGES (%)

_____

5. SOCIO-DEMOGRAPHIC DATA

Q5.10. What are the current ethnic groups?

- ☐ Frafra
- ☐ Kusasi
- ☐ Nabdan
- ☐ Bimoba
- ☐ Kokomba
- ☐ Mole-Dagbani
- ☐ Talensi
- ☐ Others (specify)

Please specify others

_____

5. SOCIO-DEMOGRAPHIC DATA

Indicate percentages for each group (Frafra)

_____

Indicate percentages for each group (Kusasi)

_____

Indicate percentages for each group (Nabdan)

_____

Indicate percentages for each group (Bimoba)

_____

Indicate percentages for each group (Kokomba)

_____

Indicate percentages for each group (Mole-Dagbani)

_____

Indicate percentages for each group (Talensi)

_____

Indicate percentages for each group (Others)

_____

5. SOCIO-DEMOGRAPHIC DATA

Q5.11. Education levels (Primary)
IN PERCENTAGES (%)

_____

Q5.11. Education levels (JHS)
IN PERCENTAGES (%)

_____

Q5.11. Education levels (TERTIARY)
IN PERCENTAGES (%)

_____

Q5.11. Education levels (VOCATIONAL/TECHNICAL)
IN PERCENTAGES (%)

_____

Q5.11. Education levels (NO EDUCATION)
IN PERCENTAGES (%)

_____

5. SOCIO-DEMOGRAPHIC DATA

Q5.11.a. Religious composition (Islam)
IN PERCENTAGES (%)

_____

Q5.11.b. Religious composition (Christian)
IN PERCENTAGES (%)

_____

Q5.11.c. Religious composition (Traditional)
IN PERCENTAGES (%)

_____

5.13 - Are there vulnerable people in your community?

- ○ yes
- ○ no

5.14 - What are their vulnerabilities?

- ☐ woman acting as head of household alone
- ☐ disabled persons
- ☐ old persons (over 65years old)
- ☐ handicapped persons
- ☐ others

Others (specify)

_____

5.15 - Is there a social assistance program for these people?

- ○ Yes
- ○ No

5.16 - What institution provides this assistance?

- ○ community
- ○ family
- ○ NGO
- ○ government

5. SOCIO-DEMOGRAPHIC DATA

5.17 - Can you describe these programs?

- ○ feeding
- ○ health/medical support
- ○ education
- ○ social support

5.18 - What are the three main economic activities engaged in by households in this community?

- ☐ crafts
- ☐ salaried employee
- ☐ petty trade
- ☐ small scale mining
- ☐ artisan
- ☐ crop farming
- ☐ livestock rearing
- ☐ fishing
- ☐ others

others (specify)

_____

5. SOCIO-DEMOGRAPHIC DATA

5.19 - Are the activities generally carried out on the area or outside?

- ○ 0 to 25 percent in the village
- ○ 25 to 50 percent in the village
- ○ 50 to 75 percent in the village
- ○ 75 to 100 percent in the village

5.20 - What are the existing activities using communal ressources?

- ○ hunting
- ○ Collecting for fruits, roots and plants
- ○ Collecting wood
- ○ Fishing

6. ORGANISATIONS, WOMEN'S GROUPS

6.1 - Are there any village groups, external organisations, EIGs (Economic Interest Groups) or NGOs that operate in the area?

- ○ yes
- ○ no

6. ORGANISATIONS, WOMEN'S GROUPS

6.1 - How many village groups, external organisations, EIGs (Economic Interest Groups) or NGOs operate in the area?

_____

» Names of groups

7. NATURAL DISASTER

7.1 - Floods are:

- ○ Rare (1 every 5 years)
- ○ Medium (1 every year)
- ○ Frequent (over 2 every year)

Q7.2. Comments / clarification

_____

7. NATURAL DISASTER

Q7.3. Destruction of farms by fires are:

- ○ Rare (1 every 5 years)
- ○ Medium (1 every year)
- ○ Frequent (over 2 every year)

Q7.4. Comments / clarification

_____

Q7.5. Does your community suffer from other natural disasters?

- ○ yes
- ○ no

7. NATURAL DISASTER

Number of other natural disasters your community suffers?
Ask respondent to list; indicate number and write in the next question

_____

» Natural Disaster

» 7. NATURAL DISASTER

8. LAND TENURE

What are the different kinds of land owner in this community

- ☐ owned by the chief
- ☐ tindana
- ☐ family
- ☐ individual

8. LAND TENURE

Percentage owned by the chief

_____

Percentage owned by tindana

_____

Percentage owned by family

Percentage owned by individual

How is land acquired for farming

How is land acquired for building

8. COMMUNITY INFRASTRUCTURES

Q8.1. Are there this collective infrastructure / good in your community?

multiple response

- ☐ Forests and other wood
- ☐ Pastures
- ☐ Permanent or seasonal lakes
- ☐ Quarries
- ☐ Preschools
- ☐ Primary schools
- ☐ Junior High School
- ☐ Senior high schools
- ☐ Health facility
- ☐ Dugout
- ☐ Wells or public taps
- ☐ Markets
- ☐ Cereal banks
- ☐ Fishing zones
- ☐ Zootechnical and veterinary centres
- ☐ Telecommunications antennas (radio/TV/internet)
- ☐ Administrative buildings (prefectures, townhalls, etc.)
- ☐ Police or military posts
- ☐ Commercial or village banks
- ☐ Sports fields
- ☐ Religious sites (to be precised)
- ☐ Cultural sites (cinema, library, etc.)
- ☐ others
- ☐ others
- ☐ others
- ☐ others
- ☐ others
- ☐ others

Other community assets

_____

Other community assets

_____

Other community assets

Other community assets

Other community assets

Other community assets

8. COMMUNITY INFRASTRUCTURES

Q8.2.1. How many Forests and other wood?

Q8.2.2. How many Pastures?

Q8.2.3. How many Permanent or seasonal lakes?

Q8.2.4. How many Quarries?

Q8.2.5. How many Preschools?

Q8.2.6. How many Primary schools?

Q8.2.7. How many Junior High School?

Q8.2.8. How many Senior high schools?

Q8.2.9. How many Health facility?

Q8.2.10. How many Dugout?

_____

Q8.2.11. How many Wells or public taps?

_____

Q8.2.12. How many Markets?

_____

Q8.2.13. How many Cereal banks?

_____

Q8.2.14. How many Fishing zones?

_____

Q8.2.15. How many Zootechnical and veterinary centres?

_____

Q8.2.16. How many Telecommunications antennas (radio/TV/internet) s?

_____

Q8.2.17. How many Administrative buildings (prefectures, townhalls, etc.) ?

_____

Q8.2.18. How many Police or military posts?

_____

Q8.2.19. How many Commercial or village banks?

_____

Q8.2.20. How many Sports fields?

_____

Q8.2.21. How many Religious sites (to be precised)?

_____

Q8.2.22. How many Cultural sites (cinema, library, etc.)?

_____

Q8.2.23. How many ?

_____

Q8.2.24. How many ?

_____

Q8.2.25. How many ?

_____

Q8.2.26. How many ?

_____

Q8.2.27. How many ?

_____

Q8.2.28. How many ?

_____

8. COMMUNITY INFRASTRUCTURES

Q8.2.1. Are they accessible to villagers? Forests and other wood

- yes
- no

Q8.2.2. Are they accessible to villagers? Pastures

- yes
- no

Q8.2.3. Are they accessible to villagers? Permanent or seasonal lakes

- yes
- no

Q8.2.4. Are they accessible to villagers? Quarries

- yes
- no

Q8.2.5. Are they accessible to villagers? Preschools

- yes
- no

Q8.2.6. Are they accessible to villagers? Primary schools

- yes
- no

Q8.2.7. Are they accessible to villagers? Junior High School

- yes
- no

Q8.2.8. Are they accessible to villagers? Senior high schools

- yes
- no

Q8.2.9. Are they accessible to villagers? Health facility

- yes
- no

Q8.2.10. Are they accessible to villagers? Dugout

- yes
- no

Q8.2.11. Are they accessible to villagers? Wells or public taps

- yes
- no

Q8.2.12. Are they accessible to villagers? Markets

- yes
- no

Q8.2.13. Are they accessible to villagers? Cereal banks

- yes
- no

Q8.2.14. Are they accessible to villagers? Fishing zones

- yes
- no

Q8.2.15. Are they accessible to villagers? Zootechnical and veterinary centres

- yes
- no

Q8.2.16. Are they accessible to villagers? Telecommunications antennas (radio/TV/internet) s

- yes
- no

Q8.2.17. Are they accessible to villagers? Administrative buildings (prefectures, townhalls, etc.)

- yes
- no

Q8.2.18. Are they accessible to villagers? Police or military posts

- yes
- no

Q8.2.19. Are they accessible to villagers? Commercial or village banks

- yes
- no

Q8.2.20. Are they accessible to villagers? Sports fields

- yes
- no

Q8.2.21. Are they accessible to villagers? Religious sites (to be precised)

- yes
- no

Q8.2.22. Are they accessible to villagers? Cultural sites (cinema, library, etc.)

- yes
- no

Q8.2.23. Are they accessible to villagers?

- yes
- no

Q8.2.24. Are they accessible to villagers?

- yes
- no

Q8.2.25. Are they accessible to villagers?

- yes
- no

Q8.2.26. Are they accessible to villagers?

- yes
- no

Q8.2.27. Are they accessible to villagers?

- yes
- no

Q8.2.28. Are they accessible to villagers?

- yes
- no

8. COMMUNITY INFRASTRUCTURES

Q8.4.1. How are these assets used by the villagers? Forests and other wood

Q8.4.4. How are these assets used by the villagers? Pastures

Q8.4.3. How are these assets used by the villagers? Permanent or seasonal lakes

Q8.4.4. How are these assets used by the villagers? Quarries

Q8.4.5. How are these assets used by the villagers? Preschools

Q8.4.6. How are these assets used by the villagers? Primary schools

Q8.4.7. How are these assets used by the villagers? Junior High School

Q8.4.8. How are these assets used by the villagers? Senior high schools

Q8.4.9. How are these assets used by the villagers? Health facility

Q8.4.10. How are these assets used by the villagers? Dugout

Q8.4.11. How are these assets used by the villagers? Wells or public taps

---

Q8.4.12. How are these assets used by the villagers? Markets

Q8.4.13. How are these assets used by the villagers? Cereal banks

---

Q8.4.14. How are these assets used by the villagers? Fishing zones

---

Q8.4.15. How are these assets used by the villagers? Zootechnical and veterinary centres

---

Q8.4.16. How are these assets used by the villagers? Telecommunications antennas (radio/TV/internet) s

---

Q8.4.17. How are these assets used by the villagers? Administrative buildings (prefectures, townhalls, etc.)

Q8.4.18. How are these assets used by the villagers? Police or military posts

---

Q8.4.19. How are these assets used by the villagers? Commercial or village banks

---

Q8.4.20. How are these assets used by the villagers? Sports fields

---

Q8.4.21. How are these assets used by the villagers? Religious sites (to be precised)

Q8.4.22. How are these assets used by the villagers? Cultural sites (cinema, library, etc.)

Q8.4.23. How are these assets used by the villagers?

Q8.4.24. How are these assets used by the villagers?

Q8.4.25. How are these assets used by the villagers?

Q8.4.26. How are these assets used by the villagers?

Q8.4.27. How are these assets used by the villagers?

_____

Q8.4.28. How are these assets used by the villagers?

_____

8. COMMUNITY INFRASTRUCTURES

Q8.5.1. Will some of these assets, or their access, be affected by the Project? Forests and other wood

- the asset
- the access
- neither
- I don't know

Q8.5.2. Will some of these assets, or their access, be affected by the Project? Pastures

- the asset
- the access
- neither
- I don't know

Q8.5.3. Will some of these assets, or their access, be affected by the Project? Permanent or seasonal lakes

- the asset
- the access
- neither
- I don't know

Q8.5.4. Will some of these assets, or their access, be affected by the Project? Quarries

- the asset
- the access
- neither
- I don't know

Q8.5.5. Will some of these assets, or their access, be affected by the Project? Preschools

- the asset
- the access
- neither
- I don't know

Q8.5.6. Will some of these assets, or their access, be affected by the Project? Primary schools

- the asset
- the access
- neither
- I don't know

Q8.5.7. Will some of these assets, or their access, be affected by the Project? Junior High School

- the asset
- the access
- neither
- I don't know

Q8.5.8. Will some of these assets, or their access, be affected by the Project? Senior high schools

- the asset
- the access
- neither
- I don't know

Q8.5.9. Will some of these assets, or their access, be affected by the Project? Health facility

- the asset
- the access
- neither
- I don't know

Q8.5.10. Will some of these assets, or their access, be affected by the Project? Dugout

- the asset
- the access
- neither
- I don't know

Q8.5.11. Will some of these assets, or their access, be affected by the Project? Wells or public taps

- the asset
- the access
- neither
- I don't know

Q8.5.12. Will some of these assets, or their access, be affected by the Project? Markets

- the asset
- the access
- neither
- I don't know

Q8.5.13. Will some of these assets, or their access, be affected by the Project? Cereal banks

- the asset
- the access
- neither
- I don't know

Q8.5.14. Will some of these assets, or their access, be affected by the Project? Fishing zones

- the asset
- the access
- neither
- I don't know

Q8.5.15. Will some of these assets, or their access, be affected by the Project? Zootechnical and veterinary centres

- the asset
- the access
- neither
- I don't know

Q8.5.16. Will some of these assets, or their access, be affected by the Project? Telecommunications antennas (radio/TV/internet) s

- the asset
- the access
- neither
- I don't know

Q8.5.17. Will some of these assets, or their access, be affected by the Project? Administrative buildings (prefectures, townhalls, etc.)

- the asset
- the access
- neither
- I don't know

Q8.5.18. Will some of these assets, or their access, be affected by the Project? Police or military posts

- the asset
- the access
- neither
- I don't know

Q8.5.19. Will some of these assets, or their access, be affected by the Project? Commercial or village banks

- the asset
- the access
- neither
- I don't know

Q8.5.20. Will some of these assets, or their access, be affected by the Project? Sports fields

- the asset
- the access
- neither
- I don't know

Q8.5.21. Will some of these assets, or their access, be affected by the Project? Religious sites (to be precised)

- the asset
- the access
- neither
- I don't know

Q8.5.22. Will some of these assets, or their access, be affected by the Project?. Cultural sites (cinema, library, etc)

- the asset
- the access
- neither
- I don't know

Q8.5.23. Will some of these assets, or their access, be affected by the Project?

- the asset
- the access
- neither
- I don't know

Q8.5.24. Will some of these assets, or their access, be affected by the Project?

- the asset
- the access
- neither
- I don't know

Q8.5.25. Will some of these assets, or their access, be affected by the Project?

- the asset
- the access
- neither
- I don't know

Q8.5.26. Will some of these assets, or their access, be affected by the Project?

- the asset
- the access
- neither
- I don't know

Q8.5.27. Will some of these assets, or their access, be affected by the Project?

- the asset
- the access
- neither
- I don't know

Q8.5.28. Will some of these assets, or their access, be affected by the Project?

- the asset
- the access
- neither
- I don't know

8. COMMUNITY INFRASTRUCTURES

Q8.4.1. Where are they located? Forests and other wood

_____

Q8.4.4. Where are they located? Pastures

_____

Q8.4.3. Where are they located? Permanent or seasonal lakes

_____

Q8.4.4. Where are they located? Quarries

Q8.4.5. Where are they located? Preschools

Q8.4.6. Where are they located? Primary schools

Q8.4.7. Where are they located? Junior High School

Q8.4.8. Where are they located? Senior high schools

Q8.4.9. Where are they located? Health facility

Q8.4.10. Where are they located? Dugout

Q8.4.11. Where are they located? Wells or public taps

Q8.4.12. Where are they located? Markets

Q8.4.13. Where are they located? Cereal banks

Q8.4.14. Where are they located? Fishing zones

Q8.4.15. Where are they located? Zootechnical and veterinary centres

---

Q8.4.16. Where are they located? Telecommunications antennas (radio/TV/internet) s

---

Q8.4.17. Where are they located? Administrative buildings (prefectures, townhalls, etc.)

Q8.4.18. Where are they located? Police or military posts

Q8.4.19. Where are they located? Commercial or village banks

Q8.4.20. Where are they located? Sports fields

Q8.4.21. Where are they located? Religious sites (to be precised)

Q8.4.22. Where are they located? Cultural sites (cinema, library, etc.)

Q8.4.23. Where are they located?

Q8.4.24. Where are they located?

Q8.4.25. Where are they located?

Q8.4.26. Where are they located?

Q8.4.27. Where are they located?

Q8.4.28. Where are they located?

9. LEVEL OF ACCESS TO BASIC SOCIO-ECONOMIC SERVICES IN YOUR COMMUNITY

Do you have Piped drinking water

- none: the village has no access to the service'
- partial: some parts of the village have access to the service
- total: the whole village has access to the service

Observations

In the absence of piped drinking water, what is the main source of water used by villagers?

9. LEVEL OF ACCESS TO BASIC SOCIO-ECONOMIC SERVICES IN YOUR COMMUNITY

Do you have Telecommunications

- none: the village has no access to the service'
- partial: some parts of the village have access to the service
- total: the whole village has access to the service

Observations

---

9. LEVEL OF ACCESS TO BASIC SOCIO-ECONOMIC SERVICES IN YOUR COMMUNITY

Do you have Electricity

- none: the village has no access to the service'
- partial: some parts of the village have access to the service
- total: the whole village has access to the service

Observations

In the absence of electricity, what is the main source of energy used by the villagers for lighting?

What is the main source of energy used by the villagers for cooking?

---

9. LEVEL OF ACCESS TO BASIC SOCIO-ECONOMIC SERVICES IN YOUR COMMUNITY

Do you have Stormwater drainage system

- none: the village has no access to the service'
- partial: some parts of the village have access to the service
- total: the whole village has access to the service

Observations

---

9. LEVEL OF ACCESS TO BASIC SOCIO-ECONOMIC SERVICES IN YOUR COMMUNITY

Do you have Public toilet

- none: the village has no access to the service'
- partial: some parts of the village have access to the service
- total: the whole village has access to the service

Observations

---

9. LEVEL OF ACCESS TO BASIC SOCIO-ECONOMIC SERVICES IN YOUR COMMUNITY

Do you have refuse dump/collection point

- none: the village has no access to the service'
- partial: some parts of the village have access to the service
- total: the whole village has access to the service

Observations

---

9. OTHER VILLAGE COMING TO THE VILLAGE

9.1 Are there other villages using resources in your village

- yes
- no

9.1a List the villages using resources or facilities

1

2

3

4

5

9.1 Are there other vilages having activities in your village

- yes
- no

9.1a List activities

---

10. CONCERNS ABOUT THE PROJECT

Q10.1 Are you in favour of carrying out the project?

- yes
- no

Q10.1a WHY

Q10.2. What are your fears about the project?

_____

Q10.3. In your opinion, what are the social and environmental components that will be positively impacted by the project?

- ○ Economic activities
- ○ Employment
- ○ Education
- ○ Healthcare
- ○ Safety
- ○ Poverty
- ○ Community life
- ○ others

Others

_____

Q10.4. What are your proposals to improve the effects of positive impacts?

_____

Q10.5. In your opinion, what are the social and environmental components that will be negatively impacted by the project?

- ○ house land ownership
- ○ housing
- ○ traffic jams
- ○ accidents
- ○ economic
- ○ air
- ○ noise
- ○ ground and water pollution
- ○ flooding
- ○ others

others specify

_____

Q10.6. What are your proposals to reduce or minimize the effects of negative impacts?

_____

Q10.7. Your remarks:

_____

11. FOR VILLAGES CLOSE TO THE RIVER OR POTENTIALLY TO BE RESETTLED

11.1 How high or close is the water level to your community during period of heavy rains/flooding?

- less than 100 meters
- about 100 meters
- about 200 meters
- about 300 meters
- about 400 meters
- about 500 meters
- more 500 meters

11.2 In case your village is displaced by the project, where would you like to be resettled

_____

11.3 What are the critaria to take into account to resettle our village?

_____

12. SURVEYOR'S OBSERVATIONS

12.1. Your observations:

_____

You are at the end of the task - you can swipe back through the form to check your answers. If all answers are correct then swipe forward to save the form. THANK YOU

APPENDIX I. LOCATION AND DESCRIPTION OF HERITAGE RESOURCES

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
1.0: Gubio					
1.1	Barri	Shrine	10°36′03.06″N 00°48′14.58″W	It is the main shrine that owns all the houses in the community. Only the chief makes sacrifices to it. There is an entire house built to house this god. It is located right in front of the chiefs Palace. Fowls, goats, and sheep are sacrificed anytime a community member wants any form of assistance from the god. It is a male god.	
1.2	Duku	Shrine		Before the farming season, every member of the community contributes money for the purchase of a cow or fowl depending on how much is collected for sacrifice, to ask for a bumper harvest. After harvesting, every member of the community gathers round the Tamarinda tree known in the local language as (pohoga)which is the god, for the harvest to be prepared and served for all to enjoy. This god is worshipped on yearly basis.	
1.3	Yaabilga	Shrine		It is a river god, that is responsible for the protection of Community members against accidents on the river. This deity is under a *Siya* tree very close to the White Volta. Fowls ,goats and two cows are sacrificed yearly to this deity .This deity also extends protection to anyone who seeks it.	
1.4	Tuuah	Shrine		A god that is worshipped for favorable rainfall pattern. Besides rainfall, it attends to the needs of any community member who calls on her. This Tuuah deity is a baobab tree and it derives its name from the baobab (tuuah) it is known to be feminine	
2.0: Namiyala					
2.1	Royal Tomb	Grave	N10°35'19.30" W0°49'25.70"	This is where a late chief was buried.	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
2.2	Yin Wuni	Shrine	N10°35'17.25" W0°49'37.41"	A shrine composed of articles covered in feathers with the function of preventing evil people and spirits from getting into the community. They believe it has capacity to protect inhabitants. It is located in the Namiyala town where sacrifices are performed periodically. There was evidence of the sacrifice of a red fowl to the shrine as furthers were found stuck between the stones.	
2.3	Bugri	Shrine	N10°35'17.24" W0°49'37.04"	A shrine is marked by empty schnappe bottles with the function of protecting inhabitants. It is located in a dilapidated structure in the town.	
2.4	Nam Bugri	Shrine	N10°35'16.63" W0°49'37.08"	A shrine is made of hip of stones and other items under the base of a tree. It is said to protect the community against evil and bad omen. It is indicated for example that, if an epidemic is heard of outside the community, sacrifices are made to the shrine, requesting it to ensure that such an epidemic does not befall their community.	

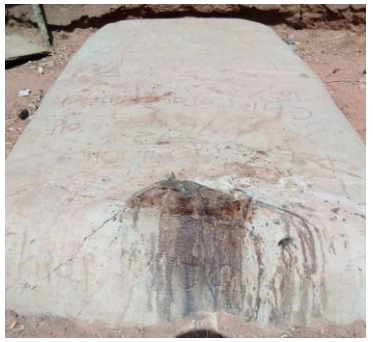
Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
2.5	Kpasoku	Shrine	N10°35'16.76" W0°49'29.92"	This deity is an *Odum* tree called Kpakpaliga. It is situated right in the community. Legend has it that after they settled at their present location, the tree came in human form with very big testicles, to inform them of the presence of all the deities in the land. This deity is the topmost deity. It generally offers protection. During planting seasons, it reveals to the people what must be done in order for adequate rainfall. It only accepts a black cow as sacrifice.	
2.6	Dinkoom	Shrine		This deity is made up of a Leopard known in the local language as KALIA and a python also known as WOAKPAMO. These together form the Dinkoom deity. They are believed to be dwelling in the surrounding hills. They are responsible for the promotion of farming activities. Sheep, goats and fowls are sacrificed to this deity.	
2.7	Bombonashina	Shrine		This is a river god, that used to be a crocodile, however, current activities in the river has caused it to relocate. A stone is currently used in its stead. This deity determines the kinds of sacrifice that should be offered. Sheep, cow and fowls have been sacrificed in the past.	
2.8	Belung Novari	Shrine	10º35"18.26"N 00º50'15.7ºW	This deity is made up of two ponds lying side by side, male and female. This deity lies at the crossroads before entering the community. Anytime a calamity is about to befall the community, it reveals itself to the chief linguist and demands either a goat sheep or fowl as sacrifice.	
3.0: Gbeo					
3.1	Gbeo	Shrine	10"36'20.98"N 00"47'31.19"W	This is the foremost deity of the Gbeo community. It is a stone and its regarded as a male god. Cows, goats, sheep and fowls can be sacrificed to this god. This deity is responsible for ensuring continuous and adequate rainfall during the planting season. It also gives protection to anyone who seeks his help. Strangers who make request for farmlands are required to make the necessary sacrifice to this deity before the lands are released.	
3.2	Bukabuk	Shrine		This deity is a large snake that dwells in the White Volta. There are two deities; male and female. Bukabuk is consulted during severe drought. It is offered sacrifices such as goats, fowls and sheep to prevent droughts by ensuring that there is adequate rainfall. It is believed that this deity can protect people against arrests by making the culprit invisible to law enforcement agents.	
3.3	NE-EM-KUGRI	Shrine		This deity is a tiger that dwells on the surrounding forests with its cubs.	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
				Upon enskinment, all chiefs are to be presented before this deity. Should it come out from its dwelling place, signifies the acceptance if the chief. However, if it fails to show up that chief will not live long. If its appeal for sacrifice is not heeded, it will visit the community to take a sheep or goat for itself.	
3.4	TOMGBANYIE	Shrine	10"36'46.81"N,0 0"47'32.97"W	This is another male deity. It is also a lion. It is the chief warrior for the people. It is consulted during times of war to help in defeating the enemy.	
3.5	KPEE-TOMGBAN.	Shrine		This deity is a crocodile. It is a female deity with lots of "children". During bumper fishing harvests where neighboring villages are gathered to come for fishing, this deity is consulted to neutralize all the other crocodiles in the river before fishing begins. Failure to offer sacrifice often leads to injuries and even death.	
3.6	Zozeh	Shrine	10º36'17.67"N,0 0º46'58.81"W.	This deity is believed to be a dwarf that dwells also in the hills. sacrifices are made to it by farmers who farm at the foot of the hills. These dwarfs stone farmers who are recalcitrant in offering sacrifices.	
3.7	MUA-APEILO.	Shrine		This is yet another crocodile deity in charge of fishing. sacrifices are made to it,so that it departs the river before communal fishing begins. After fishing sacrifices are made for it to return to the river .	
3.8	Yin	Shrine	10º36'18.59"N,0 0º47'54.04"W	This is the deity that belongs solely to the chief of the community. Any chief who is enskinned must have their personal god. Upon the death of the chief, only his son can carry this deity.	
3.9	ZONTO-OH	Shrine	10º36'18.64"N,0 0º47'53.67"W	This deity contends with the witches and wizards in the community. This deity also arbitrates cases of adultery. If an offender denies, he is killed by this deity and family members must sacrifice a cow or face extermination. Anyone in the community who comes across the remains of either an animal or human, in the forest, must bring these remains or bones to Zonto-oh or face death. This deity us a large collection of skulls, either limbs, skulls or jaw bones hanging on a stake in front of the chiefs Palace.	
3.10	SANKPI-UN	Shrine	10º35'51.58"N,0 0º49'10.3"W	This deity is a small hill near a pond right at the entrance of the community. It is consulted to avert epidemics that plague surrounding communities from entering their town. Eggs are the main sacrifice offered to it.	
3.11	Barri	Shrine		it is the main shrine that owns all the houses in the community. Only the chief makes sacrifices to it. There is an entire house built to house this god. It is located right in front of the chiefs Palace. Fowls, goats, and sheep are sacrificed anytime a community member wants any form of assistance from the god. It is a male god.	
3.12	Duku	Shrine		Before the farming season, every member of the community contributes money for the purchase of a cow or fowl depending on how much is collected for sacrifice, to ask for a bumper harvest. After harvesting, every member of the community gathers round the Tamarinda tree known in the local language as (pohoga) which is the god, for the harvest to be prepared and served for all to enjoy. This god is worshipped on yearly basis.	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
3.13	YAABILGA	Shrine		It is a river god, that is responsible for the protection of Community members against accidents on the river. This deity is under a *Siya tree* very close to the White Volta. Fowls, goats and two cows are sacrificed yearly to this deity .This deity also extends protection to anyone who seeks it.	
3.14	Tuuah	Shrine		A god that is worshipped for favourable rainfall pattern. besides rainfall, it attends to the needs of any community member who calls on her. This Tuuah deity is a baobab tree and it derives its name from the baobab (tuuah) it is known to be feminine.	
4.0: Nungu					
4.1	Waafu	Shrine	10º33'22.41"N 00º39'4.81"W	Located under shea tree. There is evidence of animal sacrifice. The deity protects the community and is also called upon for rainfall during drought. Women are forbidden from visiting the site.	
4.2	Gberisi/ Kulga	Shrine	10º33'12.28"N 00º38'53.30"W	Located under a large *nonga* tree along the White Volta where the people of Nungu moved from to settle at their current location because of the flooding. The tree is inhabited by colonies of honey bees. Community members claim that the immediate surrounding of the shrine never gets flooded. When sacrifices are to be performed, they are done on Fridays and Mondays. The Chief is the caretaker of the shrine.	
4.3	Nungu Zogbeo	Shrine		Located across the White Volta on the part Gambaga Hill facing Nungu, about 2 km away from the town.	
4.4	Nungu Sinsion	Shrine		Located at a pond about 2 km away from the town. It serves as a protection for the community. Women are forbidden from visiting the place.	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
4.5	Bulibeo	Shrine		Flat stone under *yoowhahli* tree near the bank of a stream. All sacrificial animals or food items that are used at the site are prepare and eaten there before going home- no sacrificial accoutrements are sent back to the house.	
4.6	Royal Tomb	Grave	10º33'29.36"N 0º39'6.59"W	This royal burial ground is located at the Chief's Palace.	
	Royal Tomb	Grave	10º33'27.64"N 0º39'5.56"W	This royal burial ground within the community.	
	Royal Tomb	Grave	10º33'26.26"N 0º39'4.55"W	This royal burial ground within the community.	
4.7	Old Settlement	Archeological Site/Ancestral Shrine		This is both an archaeological site and a shrine for ancestor veneration. It is located in the thicket (a grove of trees and shrubs). It is composed of a pile of stones, and cutting of the trees in the grove is prohibited. Its function is to protect members of the community. It is also	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
				made of remains of house mounds, scatters of potsherds, several trees, and old tombs. This is said to be the last place where the people of Nungu migrated from to their current settlement more than 80 years ago. The chief returns to the ancestral home, where libation and sacrifices of fowls and animal are made to thank the ancestors for their protection throughout the year or seek favors. Its function is to protect members of the community. In times of draught, they also request rainfall from this shrine. Individuals with personal needs may also make request to the shrine with a pledge of paying certain sacrificial animals, should they achieve their desires. The site extends 120 meters square.	
4.8	Manibangi Tuwa	Shrine		Located at old settlement site near a baobab tree along the road leading to the town. According to the elders, a newly installed chief died at this location and was buried here. The tree germinated after his burial. It protects the village against any evil forces or attach.	
4.9	Tindan Bugri	Shrine		This is considered the biggest shrine. It is located at the old settlement. According to the elders, when a chief is installed at Nelerigu, here is brought here to perform certain rites before he can drink water from the community. Its function is to protect members of the community against evil and failure. It paves way for success in one's work. In times of draught, they also request rainfall from this shrine. Individuals with personal needs may also make request to the shrine with a pledge of paying certain sacrificial animals, should they achieve their desires.	
4.10	Yaako Shrine	Archeological Site/Ancestral Shrine		This burial place of ancestor is located at the old settlement site. All sacrificial animals or food items that are used at the site are prepare and eaten there before going home- no sacrificial accoutrements are sent back to the house. Sacrifices are performed by the chief bare-chested. The site is marked by house remains, potsherds on the surface, baobab *toren kpaa, yolga, and pusiga* trees. Within the old settlement are remains of recently abandoned houses.	
4.11	Tabere Kpaare	Shrine		This shrine is also located at the old settlement. It is marked by big baobab tree inhabited by colonies of honeybees refered to by the locals as "war bees" because according to them they can be deployed to attack enemies during warfare.	
4.12	Barinchi	Archeological Site		Barinchi is an archaeological site which means "the Whiteman's house". According to the elders of the town, the site used to be resting place of colonial slave traders travelling from Zuarungu (near Bolgatanga) to Gambaga. These Whiteman had to take a rest at this spot after they have been carried in palanquin by people from Zuarungu and handed over to the locals for onward transportation to Gambaga across the White Volta. The area is marked by trees and tickets.	
4.13	Tindan Toka	Shrine		The shrine is located at the boundary of grassland and a small forest, about 500 m from the Barinchi site. It is marked by a stream formed in a depression surrounded by *gua* trees. According to the elders of the town, their forebears used to fish from the stream. The Tindaana is the caretaker. The chief cannot perform rite or make sacrifices at this shrine. It for protection of the village.	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
4.14	Nunshishio	Shrine		A shrine located in outcrop with a grove of small trees at the edge of pond within one of the old settlement sites. The Tindaana is the caretaker and he performs rites here.it protects the community.	
4.15	Ancestral Milling Site	Archeological Site		This is a rocky environment used by forebears of Nungu as platforms for pounding or grinding grains, and processing shea butter. There are circular holes or depression which served as grinding tools are visible at the site.	
4.6	Shrine	Shrine	10º33'26.88"N, 00º39'2.42"W	This is located near the chief's palace, and is made of concrete on which libation and sacrifices are made. Its function is for protection.	
	Tia	Shrine	10º33'29.33"N, 00º39'5.99"W	The shrine is represented by a rock on which sacrifices are made.	
5.0: Kulinga					
5.1	Kuling	Shrine	10° 32′ 02.4″N 00° 46' 33.68″W	This shrine located at the *bari* stream located at the fringe of the community about 1.5 km away. *Kuling* mean "to come". This is a male deity. The name is reference to where their forebears came to settled first. There are nyaa, *kukpewuri*, *arik* trees surrounded by shrubs ansd climbing ropes. It protects the community against evil forces and destructive rainstorms. Sacrifices are also performed for this deity for bumper harvest. Rituals are performed before planting and harvesting of crops. Rites are performed on Mondays or	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
				Fridays. People seeking favors the deity cannot partake in the sacrificial meal. The chief is the custodian of the shrine. Rites are performed bare-chested and in shorts. Strangers and women are not permitted to visit the site.	
5.2	Nambola	Shrine		This female deity is located about 1.5 km away from the village. It is surrounded by *kpogbalga, kpankpala, gom, nashurok, banoruk, baraik and* shea trees. The shrine is as old as the community. It believed to be a fertility god, and can heal the sick. Sacrifices are made to this deity to call for rains during drought. Rituals are performed on Mondays and Fridays.	
5.3	Nabolbil	Shrine		This female deity is also a stream located at the outskirt of the community about 1 km away. It protects the community and promotes bumper harvest	
5.4	Nambog	Shrine		This is a stream located about 2 km away from the community. Only calabash can be used to fetch water from the stream.	
5.5	Tuah	Shrine		This shrine is made of a big baobab tree inhabited by colonies of honeybee located about 300 m from the chief's house. It is surrounded by Is serves as a source of healing for the sick and protects inhabitants against witchcraft.	
5.6	Zozeg	Shrine		*Zozeg* or "red hill" is locate at the base of a mountain about 3 km away from the community. It protects the community.	
5.7	Mangol-Kurug	Shrine		This is a small mount near stagnant pool of water located about 2km away from the village.	
5.8	Pusi	Shrine		This is located at the back of stream about 2.5 km away from the village	
5.9	Old Settlement	Archeological site/Ancestral Shrine		This is both an archaeological site and a shrine for ancestor veneration. This is the burial place of the ancestor and other old persons. Chief of Biung, from when they got introduced to and imbibed of chieftaincy institution. This site is also one of the earlier settlements of the people of Kulinga, from where they migrated before settling at their current location. The site is marked by house remains, potsherds on the surface, shea, neem, *tukuk, bayarik,* and shrubs.	
5.10	Royal Grave	Shrine		Piles of stones in a structure. This where the late chief was buried.	
6.0: Suhuluya					
6.1	Po-hure	Shrine		Po-hure is a rain god that helps with improved farm yields, it also caters for the welfare of the community. It is consulted at the beginning of the farming season. It is believed to help in preventing diseases and calamity from befallen the members of the community. Cows are the main sacrifice offered to this deity preferably a black cow. Po-hure is a baobab tree.	
6.2	Digare	Shrine		Digare is another deity that is revered in the Suhuluya community. It is a huge stone in the river. This deity is consulted for general wellbeing. A black cow is sacrificed whenever it has to be consulted.	

Site #	Site name	Resource Type	GPS Coordinates	Description/importance	Photo
6.3	Yuaringu	Shrine		Another deity that helps with wellbeing and protection is the Yuaringu deity. It is a stream across the river. A black cow is sacrificed to this god.	
6.4	Pupella	Shrine	10° 30′ 45.05″N 00° 42′ 22.39″W	Pupella is another deity. It is a baobab tree in the community. Pupella means "pure heart" it is believed to repel any negative influence on the community.	
6.5	Wuabziya	Shrine		Wuabziya is the other deity that also performs similar functions like the Gaa deity .it accepts goat sacrifice.	
6.6	Gaa	Shrine		Gaa is also another deity, it is a tree and goats are sacrificed to it .it is consulted mostly by members of the community who seek answers to unknown problems like a sudden mishap or a chain of misfortunes.	
7.0: Bisigu					
7.1	River god	Shrine		Pythons and crocodiles in ponds near the White Volta as regarded as deities. Sacrifices are offered every year for bumper harvest (fish and crops).	

APPENDIX J. RECENT FLOOD STATISTICS (2020)

SRN	District	Number of persons affected				Total No. of persons affected	No. of acres affected (farm land)	No. of affected rooms	No. of deaths
		Adults		Children					
		Male	Female	Male	Female				
North East Region									
1	Chereponi	987	1,493	2,283	7,353	12,116	2,755		
2	Mampurugu Moaduri	3,997	4,566	3,130	3966	15,659	5,725	785	2
3	East Mamprusi	2,294	2,364	3,131	3,537	11,326	2,834	960	2
4	West Mamprusi	2,115	1,696	2,592	2,785	9,188	7,935	1,050	2
5	Yunyoo Nasuan	529	785	579	791	2,684	157	289	
6	Bunkpurugu Nakpanduri	785	1,353	939	1,185	4,262	284	470	2
	Total	**10,707**	**12,257**	**12,654**	**19,617**	**55,235**	**19,690**	**3,554**	**8**
Upper East Region									
1	Bolgatanga	132	145	130	137	544		69	
2	Pusiga	58	62	68	71	259	75	148	0
3	Tempani						163	228	0
4	Garu	284	302	250	232	1,068	792	109	0
5	Bawku Municipal	302	413	66	127	908	1,024		
6	Binduri	899	966	1,241	1,595	4,701		106	3
7	Bawku West	59	64	90	132	345	2,662	158	1
8	Talensi	288	303	448	487	1,526	3,400	281	1
9	Bongo	71	76	65	82	294	56	142	1
10	Nabdam	377	491	411	482	1771		402	
11	Kassena Nankana West	98	112	114	126	450	10		4
12	Kassena Nankana Municipal	55	55	91	84	285	30	146	0
13	Builusa North	238	345	143	295	1,021		813	1
14	Builsa South	80	100	60	64	304		126	0

SRN	District	Number of persons affected				Total No. of persons affected	No. of acres affected (farm land)	No. of affected rooms	No. of deaths
		Adults		**Children**					
		Male	**Female**	**Male**	**Female**				
15	Bolga East	168	159	214	226	782		152	
	Total	**3,109**	**3,593**	**3,391**	**4,140**	**14,233**	**8,212**	**1,665**	**11**

Source: National Disaster Management Organization (NADMO), North East Region, November 2020 & National Disaster Management Organization (NADMO), Upper East Region, November 2020

APPENDIX K.SPECIES OF USE-VALUE

FAMILY	SPECIES	LOCAL NAME	AGRICULTURAL POTENTIAL AND PRODUCTION	LIVESTOCK AND FORAGE RESOURCES	HUNTING DEVICES	WILD FOOD PRODUCTS	TRADITIONAL MEDICINE	BUILDING MATERIALS	CARPENTRY AND CRAFT	BIOFUELS	SACRED COMPONENTS
Anacardiaceae	Lannea acida	Kuntunkuri	*		*	*	*	*	*		
	Sclerocarya birrea	Nanogba	*	*		*	*		*	*	
Asclepiadaceae	Calotropis procera	Sodom Apple	*	*			*		*	*	
Bignoniaceae	Kigelia africana	Sausage tree (Nufuten)					*	*	*		
Bombacaceae	Adansonia digitata	Baobab	*	*		*	*		*	*	
	Ceiba pentandra	Kapok tree					*	*	*	*	*
Cannabaceae	Celtis toka										*
Combretaceae	Anogeissus leiocarpus	African birch	*	*		*	*	*	*	*	
	Terminalia avicennioides	Petni		*			*	*	*		*
Ebenaceae	Diospyros mespiliformis	Ebony	*	*		*	*		*		*
Fabaceae	Afzelia africana	Papao		*			*	*	*	*	
	Daniellia oliveri	Sanya		*			*	*	*		*
	Parkia biglobosa	Duaga				*	*				
	Pterocarpus erinaceus	Rose wood				*					
	Pterocarpus santalinoides	Hote	*				*				

FAMILY	SPECIES	LOCAL NAME	AGRICULTURAL POTENTIAL AND PRODUCTION	LIVESTOCK AND FORAGE RESOURCES	HUNTING DEVICES	WILD FOOD PRODUCTS	TRADITIONAL MEDICINE	BUILDING MATERIALS	CARPENTRY AND CRAFT	BIOFUELS	SACRED COMPONENTS
Meliaceae	Khaya senegalensis	Mahogany		*			*	*		*	
Arecaceae	Borassus aethiopum				*		*	*			
	Elaeis guineensis		*			*	*	*	*		
Rubiaceae	Sarcocephalus latifolius										
	Tectona grandis	Teak					*	*	*		
Sapindaceae	Paullinia pinnata	Toa-ntini	*			*	*				
Sapotaceae	Vitellaria paradoxa	Shea Nut tree	*				*	*	*		
Verbenaceae	Vitex doniana	Afua				*	*	*			
Zingiberaceae	Aframomum elliotii						*				

APPENDIX L. RESULTS OF THE CENSUS SURVEY

	Number of household	Number of people
NORTH EAST REGION		
Bunkpurugu Yongo		
Nakpanduri	18	108
Total Bunkpurugu Yongo	**18**	**108**
East Mamprusi		
Achienga	12	49
Dintigi	11	101
Gbangu	121	883
Guzulungu	56	347
Kongui	25	102
Namore	11	89
Sakomoane	20	36
Samni	112	782
Sankpakura	21	55
Shienga Tinga /Addadina	11	46
Timpela	48	383
Yooni	10	41
Total East Mamprusi	**458**	**2914**
West Mamprusi		
Arigu	71	380
Bisigu	18	109
Degaare	3	26
Gbarigu	11	59
Gbarigu Settlement	5	26
Gbarigu Settlement no2	10	54
Guabuligu	121	933
Gubeo	55	474
Karimenga	43	216
Kparipiri	70	654
Kukua	15	81
Kulunga	13	110
Kurugu	54	603
Kwakuyeti	7	42
Molmoane	27	141
Naminyala	26	182
New Gbeo	37	224
New Manga	30	225
Old Gbeo	27	171
Suhuluya	69	519
Wulugu	181	1079

	Number of household	Number of people
Wunwangu	9	74
Ziato Fongu	26	141
Sariba	86	533
Kugri Hamlet	2	5
Total West Mamprusi	**1016**	**7061**
TOTAL NORTH EAST REGION	**1492**	**10083**
Northern Region		
Savelugu Nanton		
Adayili /Kuldanali	14	71
Depali	16	107
Total Savelugu Nanton	**30**	**178**
Total Northern Region	**30**	**178**
Savannah Region		
Gonja Central		
Nteresso	10	38
Total Gonja Central	**10**	**38**
Total Savannah Region	**10**	**38**
UPPER EAST REGION		
Bawku West		
Asapaligu	20	105
Biringu	59	337
Gbere	9	60
Kamega	2	15
Kokore	1	6
Kugrasia / Kugri	18	97
Kusananba	22	133
Nafkoluga	2	11
Tedaugo	1	7
Timonde Bugiguut	52	342
Timonde Goriga	83	483
Timonde Natinga	32	203
Ziboko	23	144
Total Bawku West	**324**	**1943**
Binduri		
Khadi	13	71
Total Binduri	**13**	**71**
Talensi		
Balungu	1	6
Bapela	34	191
Buing	12	64
Fulani settlement (Nungu)	6	46
Kobogmuazuk	3	5
Nungu	119	799

	Number of household	Number of people
Pwalugu	138	762
Santeng	32	169
Tolla	57	331
Yinduri	60	304
Yinduri Zandoya	10	55
Yinduri Zontang No1	6	44
Zomela	82	332
Total Talensi	**560**	**3108**
Garu Tempane		
Takore	25	145
Total Garu Tempane	**25**	**145**
TOTAL UPPER EAST REGION	**922**	**5267**
TOTAL		
TOTAL GENERAL	**2454**	**15566**

APPENDIX M.RESULTS OF THE G-RES TOOL MODELLING

g-res tool
assessing ghg emissions from reservoirs

Inputs Report

PARTNERS:

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Name of reservoir: Pwalugu

Catchment Information

Catchment Area (km^2)	57032
Population in the Catchment	5038544
Catchment Annual Runoff (mm/yr)	795
Release of phosphorus from community sewage in the catchment (kg P /yr)	0
Community Wastewater Treatment	Primary
Release of phosphorus from industrial sewage in the catchment (kg P /yr)	0
Industrial Wastewater Treatment	Primary

	Land Cover in the Catchment Area				Pre-Impoundment Land Cover in the Reservoir Area					
	%	km^2	Land Use Intensity Past	Land Use Intensity Current	%	km^2	% Mineral Soil	% Organic Soil	Past Land Use Intensity	% of Organic Soil that is Drained
Croplands	83 %	47336.6	0	0	29.2 %	77.4	29.2 %	0 %	50	
Bare Areas	0.1 %	57			0 %	0	0 %	0 %		
Wetlands	0.1 %	57			0 %	0	0 %	0 %		
Forest	1.6 %	912.5	0	0	53.9 %	142.8	53.9 %	0 %	50	
Grassland/Shrubland	14.1 %	8041.5	0	0	13.7 %	36.3	13.7 %	0 %	0	
Permanent Snow/Ice	0 %	0			0 %	0	0 %	0 %		
Settlements	0.4 %	228.1	0	0	1.1 %	2.9	1.1 %	0 %	0	
Water Bodies	0.7 %	399.2			2.1 %	5.57	2.1 %			
Drained Peatlands	0 %	0			0 %	0		0 %		
No Data	0 %	0			0 %	0	0 %			

Reservoir Information

Country	Ghana	River Length before Impoundment (m)	
Longitude of Dam (DD)	10.58	Phosphorus Concentration (ug/L)	80.6
Latitude of Dam (DD)	-0.69	Trophic Level	Eutrophic
Climate Zone (Reservoir Area)	Tropical	Reservoir Mean Global Horizontal Radiance (kWh/m^2/d)	6.05
Impoundment Year		Mean Temperature per Month (°C)	
Reservoir Area (km^2)	265	January	27
Reservoir Volume (km^3)	2.622	February	28.9
Water Level (m above sea level)	165	March	30.8
Maximum Depth (m)	33	April	30.4
Mean Depth (m)	10	May	29.2
Littoral Area (%)	23.2	June	27
Thermocline Depth (m)	0.9	July	25.6
Water Intake Depth (m)	32	August	25.2
Water Intake Elevation (m above sea level)	133	September	25.7
Soil Carbon Content Under Impounded Area (kgC/m^2)	6	October	27.1
Annual Wind Speed at 10 m (m/s)	5.9	November	27.7
Water Residence Time (WRT, yrs)	0.6928	December	26.6
Annual Discharge from the Reservoir (m^3/s)	121.3	Mean Annual Air Temperature (C°)	27.6

g-res tool
assessing ghg emissions from reservoirs

Reservoir GHG Results Report

PARTNERS:

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Name of reservoir: Pwalugu

Reservoir GHG information

Net Predicted Annual CO_2e Emission	Post-Impoundment	-	Pre-Impoundment	-	Unrelated Anthropogenic Sources	=	Net GHG Footprint	95% CI
Emission Rate (tCO_2e/yr)	**799 588**	-	**-19 761**	-	**433 000**	=	**386 349**	**(299 530-483 731)**
of which CO_2	94 377	-	-19 997		n/a	=	114 374	
of which CH_4	705 211	-	236	-	433 000	=	271 975	
Emission Rate ($gCO_2e/m^2/yr$)	**3 017**	-	**-75**	-	**1 634**	=	**1 458**	**(1 130-1 825)**
of which CO_2	356	-	-75		n/a	=	432	
of which CH_4	2 661	-	1	-	1 634	=	1 026	

*Using GWP100 of 34 to obtain CH_4 emissions as CO_2e (IPCC 2013)

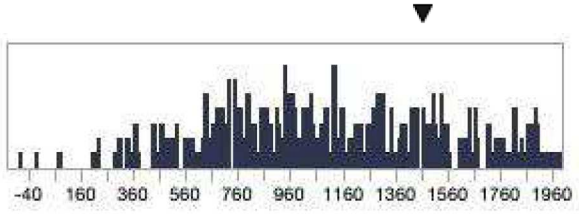
Unrelated Anthropogenic Sources

Potential amount of UAS as % of post-impoundment emissions: 61 %

Weighted sum model risk result: 177

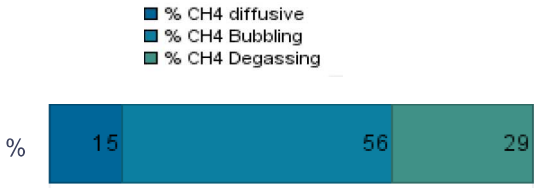
This reservoir compared to worldwide reservoirs

Net Reservoir Footprint ($gCO_2e/m^2/yr$) = 1458



Detailed CH_4 Post-Impoundment Emissions

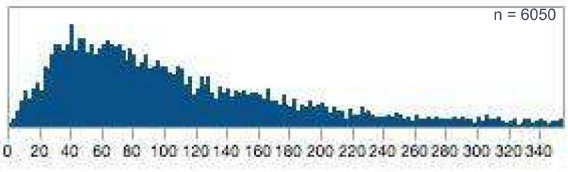
Relative contribution to CH_4 Post-Impoundment Emissions (%)



This reservoir CH_4 and CO_2 emissions compared to worldwide reservoirs

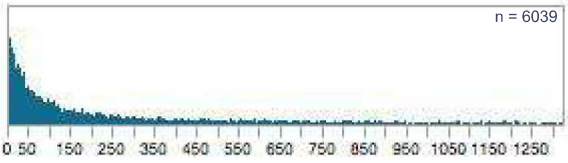
CH_4 Diffusive Emissions ($gCO_2e/m^2/yr$) = 393

Value higher than 355 $gCO_2e/m^2/yr$



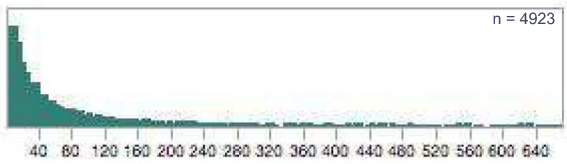
CH_4 Bubbling Emissions ($gCO_2e/m^2/yr$) = 1485

Value higher than 1325 $gCO_2e/m^2/yr$



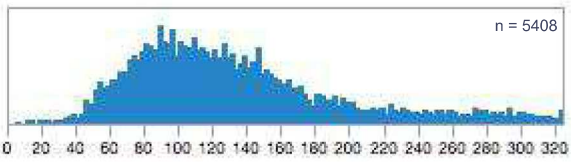
CH_4 Degassing Emissions ($gCO_2e/m^2/yr$) = 783

Value higher than 675 $gCO_2e/m^2/yr$



CO_2 Diffusive Emissions ($gCO_2e/m^2/yr$) = 356

Value higher than 325 $gCO_2e/m^2/yr$



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assessing ghg emissions from reservoirs

Total GHG Footprint Results Report

PARTNERS:

iha UQÀM

Name of reservoir: Pwalugu

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Total GHG footprint information

	Post-Impoundment		Pre-Impoundment		Unrelated Anthropogenic Sources		Construction (Reservoir)		Net GHG Footprint	95% CI
Areal Emissions ($gCO_2e/m^2/yr$)	3 017	-	-75	-	1 634	+	n/a	=	1 458	(1 130 - 1 825)
Reservoir Wide Emissions (tCO_2e/yr)	799 588	-	-19 761	-	433 000	+	2 874	=	389 223	(302 404 - 486 605)
Total Lifetime Emission (tCO_2e)	79 958 836	-	-1 976 058	-	43 299 976	+	287 370	=	38 922 288	(30 240 350 - 48 660 500)

*Using GWP100 of 34 to obtain CH_4 emissions as CO_2e (IPCC 2013)

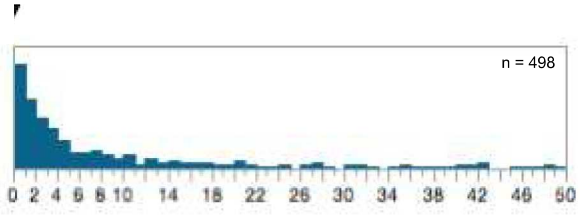
Allocation information

Net GHG Emissions Contribution for Each Reservoir Services

Reservoir Service	GHG Emissions from Reservoir (tCO_2e/yr)	GHG Emissions from Construction (tCO_2e/yr)	GHG Footprint (tCO_2e/yr)	Percentage Allocation (%)
Flood Control	19317	144	19461	5
Fisheries	9659	72	9731	2.5
Irrigation	19317	144	19461	5
Navigation	0	0	0	0
Environmental Flow	9659	72	9731	2.5
Recreation	0	0	0	0
Water Supply	19317	144	19461	5
Hydroelectricity	309079	2299	311379	80

Hydroelectricity and Net GHG footprint

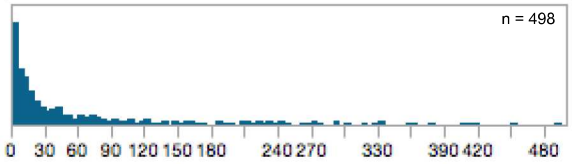
Power Density (W/m^2) = 0.4



Allocated GHG emissions intensity (gCO_2e/kWh)=

1128.2 (868 -1 402)

Value higher than 500 gCO_2e/kWh



Allocation Method Used:

Operating Rule Curve

Emission Factor Used:

Default Emission Factors used

At least one Emission Factors Provided by user

Construction Comments:

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assessing ghg emissions from reservoirs

Construction

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Name of reservoir: Pwalugu

Construction information

Own Assessment

		Emission output kgCO2e
Known Value for Construction	Total construction emissions	

Basic Assessment

Earth and Rockfill	Material excavated and/or used for construction	3.960.507	m^3		km moved	86
Concrete	All concrete brought to site for the dam, tunnels, foundations	819,121	m^3		km delivery distance	274544786
Steel	All steel brougth to site for reinforcement, pipelines, mechanical and electrical equipments		tonne		km delivery distance	0

More Detailed Assessment

Earthworks	Soft Excavation		m^3		km moved	0
	Rock Excavation		m^3		km moved	0
	Clearance and Removals		ha			0
Fill	Granular Fill		m^3		km delivery distance	0
	Rock Armour		m^3		km delivery distance	0
	Zoned Rockfill		m^3		km delivery distance	0
	Rock bolts		number		km delivery distance	0
Concrete Works	Formwork		m^2			0
	Facing Concrete		m^3		km delivery distance	0
	Mass Concrete		m^3		km delivery distance	0
	Reinforced Concrete		m^3		km delivery distance	0
	Shotcrete		m^2		km delivery distance	0
	Reinforcement		tonne		km delivery distance	0
Steelworks	Steel Penstocks		tonne		km delivery distance	0
	Steel Liner		tonne		km delivery distance	0
	Miscellaneous Steelwork		tonne		km delivery distance	0
Roads and Bridges	New Roads	15	km			5970000
	Refurbishment of Existing Roads		km			0
	PCC Vehicular Bridge Deck		m^2			0
Equipment	Power Generation	60	MW			1080000
	Power Connection	161	V	15	km length	5774916

APPENDIX N.STAKEHOLDERS ENGAGED AND ISSUES RAISED

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
Project Proponent					
1	Volta River Authority (VRA)	Kwaku Wiafe (Project Coordinator);Afua Thompson (Project Engineer);Emmanuel Marrtey (Resettlement Manager); David Prah (Gov't/Public Relations); Nana Afia Frimpong (Environmental Officer); Ptrina Aggrey (Assit. Resettlement Officer); Nana Adwoa Boateng (Assist. Community Relations Officer); Abigail Terkper (Info/Publicity); and Wisdom Tetteh (Assist. Communication Officer)	0244484315 030-23221327	2nd June 2020 28th January 2021	- The site on June 1, 2020, was officially handed over to the EPC Contractor who is presently on site. - The Contractor has started preliminary activities comprising of geological, topographical survey and installation of staff for steam flow measurement. - VRA, in collaboration with the Regional Coordinating Councils and District Assemblies, engaged the Chiefs and community members in the dam site area to formally seek approval for project to commence. - The start of the ESIA exercise was postponed due to the pandemic. The program has been revised has therefore been revised. - As an urgent matter, VRA is requesting TEF to determine the acquisition area for the project. This will aid in the preparation of the cadastral plan for the acquisition of the project area by Executive Instrument (EI).
Government/Regulatory Authorities					
1	Land Commission, Accra	Daud Suleman Mahama (Executive Secretary) Samuel Benson Adjei (Chief Valuer, LVD)	0208134310 0208112676	3rd June 2020	- Land Commission is playing a significant role on the Project i.e., land acquisition and quality assurance - Land acquisition process is guided by a statute - The RAP and related reports will feed into an Interim Valuation Report - All PAPs have the right of representation

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
		Felix Oduro-Buadu Aboagye Kusi (Director, Survey and Mapping Division) Ben Arthur (Director, LVD) Jones Ofori Buadu(Deputy Executive Secretary, Corperate)	0202055182		- The actual compensation kicks in after the Executive Instrument (EI) is passed - The Commission have to be involved in the RAP beyond observation i.e., collection of parallel data with the valuation consultant - Commends VRA for involving the Commission from the onset - There is the need to embark on community engagement as early as possible - The Project has to learn from past VRA experiences e.g., Kpong/Akuse, Bui. - Consider all aspects of chieftaincy and land tenure arrangements in the Project area in the course of the resettlement process - Since the Project straddles two regions, there is the need for a Joint Committee by the Lands Commission to handle issues
2	Environmental Protection Agency (EPA), Accra	Ebenezer Appah-Sampong, Kwabena Badu-Yeboah	0501301399 05013011746	4th June 2020	- Biodiversity issues, especially in Forest Reserves, need to be addressed - The EPA is conversant with the Project and will follow progress of work keenly - The Agency will provide the necessary support
3	Water Resources Commission, Accra	Dr. Bob Alfa	0243210645	4th June, 2020	- The Water Research Institute (WRI) is one of the 13 research institutes of the Council for Scientific and Industrial Research (CSIR). - The WRI has done some studies on both the White Volta and Bui Projects - Willing to make some contributions to the RAP and ESIA process - The WRI has collaborated with various institutions and agencies to execute projects. e.g., Water Infrastructure Solutions from Ecosystem Services Underpinning Climate Resilient Policies and Program (WISE-UP to Climate) - The objective of the project is to increase adaptive capacity in the Volta basin through recognition and inclusion of ecosystem services provided by natural infrastructure in investment strategies for climate change adaptation and through optimization with built infrastructure planning and development. - The institution has also been involved in the design and Assessment of Resilient and Sustainable Interventions in Water-Energy-Food-Environment Mega-systems (FutureDAMS). - WRI has offices in Accra, Tamale and Akosombo

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
4	Water Research Institute	Deborah Ofori	deborah.ofori @gmail.com	4th June 2020	- The Water Research Institute (WRI) is one of the 13 research institutes of the Council for Scientific and Industrial Research (CSIR). - The WRI has done some studies on both the White Volta and Bui Projects - Willing to make some contributions to the RAP and ESIA process
5	The Minerals Commission, Accra	Martin Kwaku Ayisi (Deputy CEO) Collins Anim Sackey (Director, Policy Planning & Mineral Tittle Policy Planning) Hassan Alhassan Richard Kofi Adjei (Head of Inspections & Compliance)		4th June 2020	- The Commission continues to receive applications for mining concession in sections of the Upper East Region - The Commission if committed to minimizing the impact of the Project on the government - Needs the Project map indicating expropriation areas to enable the Commission demarcate no-go areas
6	Forestry Commission, Accra	Mr. Kwadwo	0244234885	5th June 2020	- The Commission needs to be informed early, on which part of the Forest Reserves will be submerged or expropriated by the dam. This will enable them to take proactive steps to harvest economic trees from the reserves - There is the need to identify and engage all PAPs as early as possible - The forest reserve areas are known elephant corridors; needs to know the impacts on the elephants - A good case for net benefit of the Project has to be made to justify its feasibility. - Consideration should be made for biodiversity offset program to mitigate the impacts of the forest reserves - Note that different species of birds mass up during the cropping season - There is the need to form a Technical Committee/Team with the FC to deliberate on biodiversity offset issues - Addressing biodiversity offset issues are one of the key permit conditions from the EPA - As in the case of Bui Dam Project, consider the possible relocation of impacted animals - During the assessment, ensure that IUCN ratings do not supersede that of our national laws (which has higher requirements and standards)

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
					- Share the initial Pwalugu Dam Scoping Report with the Commission
7	Lands Commission, Bolgatanga	Nukunu Nuviadenu (Regional Lands Officer) Mr Acheampong Wildfred (Head, LVD)	0243664416 0244456194	8th June 2020 8th June 2020	- Involve local labour in some aspects of the work; - Land tenure in Upper East and North East Regions are similar; they controlled by the Nayiri or the Chief - Compensation is slightly controversial in Upper East. Families or clan own lands in most cases. However, some Chiefs also own land. The Tindana also owns lands in some cases. There are however, no Tindana in North East Region - Public consultation is required in the process of land acquisition - Issues to be mindful of include community entry and engagement, liaise with Assemblymen, Chiefs, Land owners, and Customary Lands Secretariat (CLS) - Messages regarding Project Cut-off Date should be carefully communicated
8	Environmental Protection Agency, Bolgatanga	Asher Nkegbe (Ag.Regional Dir)	0208294658	8th June 2020 8th June 2020	- Need to pay attention to small-scale mining activities in Shiega area; some of the areas has been earmarked by government for artisanal small-scale mining (ASM)

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
		Mr Hamidu Abdulai (Ag.R Head, NER) Mr.Emmanuel Yeboah (Principal Program officer	0501301586 0246228778	8th June 2020	- The Project needs to prevent ASM operators from getting close to the dam area - EPA's responsibility is to ensure that license holders adhere to their permit conditions. - The Project needs to take stock of activities along the buffer area - There are bamboos along the road and along the banks of the river - The dam is likely to invite animals grazing which could disturb the area and cause siltation and erosion - Take stock of traditional and sacred grooves, trees with gods, rivers gods etc. and perform the necessary rituals for their relocation - Also take note places of worship, mosques, shrines, graves behind houses, - Economic trees such as Shea nuts should be accounted for - Where chiefs own lands, he will be interested in knowing what compensation is paid - There is the need to engage mining companies in the Project area, e.g., Cardinal Resources and Shaanxi Mining - Under the Sustainable Land Management Project, trees are being planted along the banks of the rivers - The dam area is likely to be invaded by human people. The Project should take steps to prevent this to avoid degradation/siltation along the dam - The Project should pay attention to cultural heritage issue as well e.g., shrines, graves, sacred groves, and places of worship - Be mindful of speculative activities

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
9	Forestry Commission/Wildlife Division, Bolgatanga	Emmanuel Ntiako (Assist. Reg. Manager) David Yidana (Assist.HR.Manager) Emmanuel Yeboah (Reg. Manager)	0244551230 0246372591 0243357138	8th June 2020	- The Dam will affect the Red Volta - Dam likely to cause migration of Elephants in the elephant corridors. - Three (3) Forest Districts in Upper East Region will be impacted by the Project - Part of the Forest Reserve is a known elephant corridor. Concerned about the fact that the elephants may not have a place to the forage. People have sighted more that 50 elephants in the area in recent times - Elephants are owned by both Burkina Faso and Ghana. There is an MOU on this. - The Forestry Commission needs to know the boundaries of the project to Actual so they could remove important economic trees before the area is inundated. This will also enable the Commission to plan for tree planting program, and appoint forestry guards to accompany consultants to the forest - There is the need for all impacted communities to be extensively engaged - Some areas of the forest are farmed on Tonja basis; farmers are permitted to plant crop and trees - Forest Entry Permit is required before the Biodiversity Team enters the forest reserve to work - For security reasons, the Team needs to inform the Police anytime we are driving to remote parts of the project area; - Some settlers are apprehensive that they will be removed from the areas
10	Minerals Commission, Bolgatanga	Dickson Adigiba (District Officer) Sheriff Al-Amin (District Officer) Godwin Kpedzro(District Officer)	0542525315 0243929111 0209000918	9th June 2020	- Area blocked out but not given out for small-scale mining the Commission wants to know the areas earmarked for the dam before approving individual applications because national interest is paramount - Some portions of the block out area is within the Project buffer - Applications are coming in their numbers but the Commission is holding back because of the Project - Any illegal miners found within the dam demarcated land will be evicted - Quarries and illegal sand winning are some of the activities going on in the area
11	Department of Agriculture, Bolgatanga	Francis Ennor (Regional Director)	0201318269	11th June 2020	- Committed to providing staff to support the Project - The Pwalugu tomato factory is defunct now - The irrigation will enable all-year round farming especially vegetable production during the dry season

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
12	Department of Fisheries Bolgatanga	Hawa Bint Yaqub (Principal Director)	0244886704	10th July, 2020	- Concerned that fishing grounds are being appropriated gradually all over the country - This project will also reduce or impede access to fishing grounds in the area - Fishermen should be adequately compensated and support to engage in other livelihood activities - People's expectations should be well managed
13	Forestry Services Division of the Forestry Commission, Walewale	Ishmael B. Agyeman (District Manager) Gbal Gordious (Assistant Manager)	0249192655 0208098486	12th June 2020 12th June 2020	- Forest Entry Permit is required from the Head Office before consultants will be allowed to work in the forest - The FSD need to be furnished with map indicating the Project boundaries. This will aid avoiding the ongoing tree planting exercise from getting into the expropriated area - Birds sanctuary can be found around Bangu - Some illegal farmers are cultivating part of the Forest Reserve - Fulani headsmen are along the river
14	Water Resources Commission, Bolgatanga	Aron B. Aduna (Regional Head/Basin Officer, Andrew Asanvinsa (Asistant Basin Officer)	0242074537 0244507141	11th June 2020	- The Commission manages the whit Volta basin - Areas of interest are dam safety, trans boundary issues - Buffer zone issues should be well thought through and managed - Put in measures to minimize downstream flooding - Morphology changes of the river and its implications should be critically assessed - A key issue of concern is flooding downstream; put in place measures to minimize flooding - Planning stage has to consider every factor holistically. The water resource present in the white river basin does not belong to anybody. VRA should be having discussions with Ghana Irrigation Development Authority (GIDA) and other parties on how the reservoir will be managed in future - When engaging institutions, examine their mandates and facilitate their involvement - Ghana needs to manage relationship with other riparian countries - Land tenure is different in various aspects of the project area. A chief cannot just take up lands without consultation to families.

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
					- VRA has to put a management authority in action that engages Burikan Faso in a friendly manner and convince them to release more water than they are currently doing. The WRC would be in the position to do so - Basin Management Board is concerned about all the characteristics of the Water Resources including all items found in it. - Make reference to the Dam Safety Law and note licensing requirements for the dam construction
15	Customary Lands Secretariat, Talensi District, Tongo	Naab Nyaakora Mantii (Traditional Authority)	0244294588	11th June 2020	- Would like to know what happens to new farms after the enumeration and valuation has been completed - PAP and project communities need to be sensitized on documenting their lands - Would to know the exact appropriation areas/land so people could commence site plans for their land
16	Wulugu Health Center	Peter Abosuri	0248764074	15th July 2020	- The project should put measures in place to manage occupational health issues as well as population influx and its attendant problems such as STI; - Concerned that the reservoir will be impeded access to other communities because some route might be inundated. - The health centre needs to be supported by the project because it is the first point of call for project communities such as Kulugu, Kparipir, Suhuluya, Gubeo, and Kulunga, Kpatusi - Concerned about increase in cases of waterborne diseases - There is also the risk of accidents e.g., drowning - The irrigation component of the project should be made to benefit all project affected households - Expect the project to employ more locals especially those most impacted by the project
		Ruth Mbah	0554654408		
17	Savanna Zone Agricultural Productivity Improvement Project (Tamale)	Wilson Doku (Value Chain & Agribusiness Development Specialist)	0544342510	16th October 2020	- Pay particular attention to farmers who might be impacted by the project - Educate people, particularly the affected communities on the importance of the project to erase the erroneous impression people have about it. - Willing to provide any technical advice in support of the project
		Peter Osei Tutu- M&E(SAPIP) Specialist	0508450171		
		Theresah Fynn – M&E(SIP) Specialist	0244620041		

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		Felix N. Darimaani- National Programme Coordinator - SAPIP/SIP	0244582657		
18	Feeder Roads (Nalerigu)	Emmanuel A. Odum	0243340933	16th October 2020	- Aware of the project and have strong belief that it will benefit the people the regions and beyond. - Need to be consulted if any road will be affected by the project
District/Municipal Assemblies					
1	West Mamprusi District Assembly	Seidu Salifu (Planning Officer)	0208722438	12th June 2020	- The Project has high level of community acceptance - Farmers and other PAPs need to be continuously engaged - Serious problems not expected - Already doing community mobilization - Ghana Productive Safety net Project in being implemented in the District. The development objective of the Productive Safety Net Project is to strengthen safety net systems that improve the productivity of the poor. - Vegetables including onions, watermelon are being cultivated along the river - Within the district, land is vested in the Chief. However, land for farming is in the hands of families - Involve local authority in recruitment.
2	Bawku West District Assembly, Zebila	Ben Nodio (Planning Officer)	0208404383	9th June & 5th August 2020	- Welcomes the Project and promised to provide the needed support - Main concern of the District is the depleting natural resources and polluting of water bodies - Community entry and engagement activities should be continuous and consistent - Compensation issues should be handled with care in order to avoid conflict - Concerned about depletion of natural resources - Pollution of water bodies

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3	Talensi District, Tongo	Diana Asabia (District Planning Officer)	0247808313	10th June 2020	- Some of the project being implemented by MoFA (e.g., Sustainable Land and Water Management Project) located along the White Volta. - MoFA provides technical support to farmers at Yinduri and Pwalugu to grow bamboo - Concerned that farmers along the river bank might be displaced by the project - People farm all-year round along the river which mean they have to reach for alternative farmland to continue their farming activity - There is the need to put structures in place to enable affected farmers benefit from the irrigation project - Appropriate irrigation canals for small-holder farmers - Extensive stakeholder engagement needs to be undertaken to inform communities along the river concerning the potential impacts of the project - The dam should be well managed to regulate flooding situation in the area - MoFA is ready to support the project in the design and implementation of livelihood restoration program for the project e.g., productivity and quality, farm management, value chain, and marketing issues, - There is the need to harvest economic trees such as shea before the area gets inundated. - Communities have been informed about the Project - Main livelihood activities in the district are farming, livestock rearing, fishing, handcraft etc. - Ready to support the Project
		Dakurah Emmanuel(DDPO)	0244993581		
		Musah Yussif(DCD)	0246242547		
		Alebga A. Simon(District Engineer)	0244836362		
4	Garu District Assembly, NADMO, MOFA	Paw Azure Arparibo	0247692650	11th August 2020	- Aware of the project and hope that it will perpetually address the perineal flooding situation in region - People farming along the bank of the river are likely to affected by the project; they need to be engaged and compensated - Expects the project to create employment opportunities for the youth
		Felix Akeliba	0541620027		
		Francis Akadigiba	0244988807		
5	East Mamprusi District Assembly, Gambaga	Hamidu (District Director)	0208556041	12th June 2020	- Stakeholder engagement have been undertaken in the district - The Assembly is committed to supporting the Project - Compensation issues should be handled with care
		Salifu Issifu (Municipal Planning Officer)	0208246815		

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		Tia Mumuni (Secretary to Gambaga Zonal Council)	0245123213		
		Hon. Sampson (Assembly Member for Nakosigu Electoral Area)	02458501519		
6	North East Regional Coordinating Council, Nalerigu	S.S Agbeve	0543347006	12th June & 12th October 2020	- Cultural heritage issues should be taken seriously during the course of the Project e.g. relocation of graves and shrines - Apart from farming, fishing is also being done along the river - Resettlement issues are of paramount importance; should be handled with care - Need to engage all stakeholders, especially PAPs, as early as possible to avert potential conflict
		Chimsi Musah (Director of Adm.)	0244951673		
		Solomon Boar (Hon. Reg. Minister)	0244845377		
7	Bawku Municipal Assembly	Hajia Hawa Nichema (Municipal Chief Executive)	0244810356	12th August 2020	- When the Dam is constructed electricity would be available to most of the communities with fewer power cuts - Will boost the economic benefits in the communities - Will motivate traders from neighbouring countries (Burkina Faso and Togo) to trade with them more
		Alhaji M Issahaku (Municipal cord. Director)	0244154842		
		Cynthia Nantari (Planning Officer)	0540585636		
		Abubakari Bila (MPO)	0243768724		
		Fuseini Ahmed Tijani (NADMO)	0246711247		
8	Bawku West District Assembly	Hon. Victoria Ayamba (Bawku West District Chief Executive)			- The Dam would help the communities stock up and sustain water for the people and their farms to keep them working all year round - The Dam would provide constant electricity for the communities because between 60 – 70 communities do not have access to power
9	Binduri District	Abanga Joseph (Assistant Director)	0247277858	11th August 2020	- Introduction of hydro power will power industries in the district to produce more to feed the people and also export outside the region and also the country - Will improve water supply all year round

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10	Upper East Regional Coordinating Council	Hon. Tangoba Abayade (Regional Minister)			- The project would change the face of the region. - It will put the region on the world's map - It would help reduce perennial flooding during raining season and the Bagri dam spillage - The project would create more jobs during and after the construction
11	North East Regional Coordinating Council	Hon. Solomon Namliit Boar (Regional Minister)	0244845377	12th June 2020	- Noted that the project is the biggest and the largest investment in the region since independence. - Stressed that the dam will bring relief and dignity to the region in terms of economic opportunities that would be made available through the construction of the dam. - Believed that the project will reduce migration of the people from the region to the south in search of jobs particularly during the dry season, since there will be enough water for farming throughout the year. - Expects the project to create more jobs (direct and indirect jobs). - Confident the project would reduce the issue of perennial flooding in the area. - Also, expect the project would boost tourism since the region is already a tourist hub.
		Chimah Mussah (Director of Admin)	0244951673		
12	East Mamprusi Municipal Assembly	Issaka Braimah Basintale (Municipal Coordinating Director)	0203308215	21st July 2020	- The Dam will improve the electricity supply to the three Northern Regions. For instance, it will help the health sector to store drugs for longer periods and used as and when needed than compared to now that drugs need to be used within a short period of time - The construction of the dam will attract workers who have been posted into these areas by improving social amenities - The dam will also attract investors into the northern regions - There would be all year farming due to improvement of irrigation resulting in the abundance to agricultural produce - The project would improve the employment situations in the area both during the construction of the dam and after completion - Construction of the dam will bring about economic benefits especially promoting and developing tourism in the area - The dam will address the continuous flooding in these areas because anytime there is heavy rains and the Bagri Dam gets flooded it destroys farms, homes and sometimes the lives of the inhabitants in these areas
		Yakubu Mohammed Gunu (Internal Auditor)			

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Non-Governmental Organization (NGOs)					
1	Ghana Red Cross Society (Bolgatanga)	Paul Wooma	024664095	12th October 2020	- More education on the need for the project should be carried out especially on radio, in their local language for everyone to appreciate, since is a good project. - People affected by the project should be well compensated to prevent any form of agitation in the future.
2	PARED (NGO), Nalerigu	Assane S.M Tampuri	0243509790	16th October 2020	- They raised a concern that, the Authorities of the project must address the concerns of the people affected by the project to avoid any future agitations. - Again, the Authorities must intensify their education on the benefits of the project and the fact that people affected by the project would be duly compensated.
3	World food Program (NGO), Bolgatanga	Joshua Diedong:	0542601206	12th October 2020	- Project should address the food security needs of project affected persons - Ensure that livelihood restoration programs for the project factors in the needs of all project affected persons
- Project Communities					
1	Samini Community	Hajia Abdulai Seriga	0249630499	16th October 2020	- Happy about the fact that such a project is coming to the region. They are in full support but plead with the authorities to ensure that all affected people are well compensated.
		Salifu Manlokiya	0551686681		
2	Wulugu Community	Mandiaya(chief)	0205650375	16th October 2020	- Thankful to the Government for bringing such a project to the region and plead with the authorities to employ the youth in the community when the main construction work starts.
3	Dipala Community	Issah Rashid	0595300216	17th October 202	- Expressed their readiness to support the project and said they want the government to amicably settle any dispute that may arise in the construction of the dam.
4	Adayili Community	Ahado Kofi	0541747621	18th October 2020	- Expressed their gratitude for coming to brief them on the project and promised to render any form of support should the need be.
		Korku Agbea	0558048232		
5	Kukua Community	Amadu Adam	0249627963	17th October 2020	- This was the first-time people had officially come to the community to inform him about the project, even though he had heard about it on radio. He wished and prayed for the success of the project.
		Alhassan Abdul	0545031378		

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6	Zormela	Kennedy Sapaabin	0593246006	4th August 2020	- The people said their gods is by the river, therefore they want to know what the government would do about it as he plans to resettle them. - Elephants are threat to community member as they tend to destroy farms and sometimes pose danger human life
		Taabaya Puyum	0544563225		
7	Namiyala	Yinyanluya Wuni:	0242753957	7th July 2020	- Of the view that the upcoming construction of dam will negatively affect health as there is potential that new diseases will be introduced into community by many people visiting. - Affected farmers should be supported to continue their farms
		Asamba Francis	024990405		
		Prosea Abass	0202129594		
Traditional Authority					
1	Nalerigu Traditional Council	Nayiri (Paramount Chief)	0249180473		- Would like to know if VRA has already acquired the land for the project - Various chiefs and overlords in the area should be consulted during land acquisition for resettlement - Communities to be resettled should not be moved to different traditional authority. Allegiance of people in the traditional jurisdiction should be maintained - Extensive engagement needs to be done with the communities - Chiefs facing any challenges in their community regarding this project should not hesitate to consult the Paramount Chief or the Overlord
		Wudana	0208293844		
		Tarana	0249184026		
		Akora			
		Kpatirana (Assemblyman)	020403972		
		Nachinaba			
2	Wulugu Chief & Elders	Naa Madiaya (Chief)	0205650375	29th June 2020	- The project should put in measures to manage the Issue of allegiance by traditional rulers during resettlement. - What happened to farms/crops and property damaged outside demarcated zone.
		Wudana (Elder)	0243847404		
		Wuni Alidu (Elder)	0500266317		
		Abdulai Nabila (Elder)	0540363734		
		Baba Amadu (Elder)			
		Zaadan Bugri (Elder)	0509161340		
3	Kasape Chief	Naa Yakubu Dawuda Mohammed	0551946233	15th July 2020	- Inclusion of youth of the area in employment is key for project success - Farmers need to be identified and compensated - Involve community leaders in the project

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4	Nungu Chief and Community	Isaac Bugre Abubakari	0206100321 0553357153	25th July 2020	- Heard about the project and is in full support - The Chief would not want to be under any other chief, so should there be a resettlement, they would want to be anywhere within their own land. - Concerned that the most fertile part of the land, which is along the bank of the river, will be covered by the reservoir, and deprive farmers of their source of livelihood - Also concerned about accidents e.g., drowning - Economic trees such as shea and baobab will be destroyed by the dam - There is likely to be conflict between elephants and humans because the animals will be displaced from their habitat. - Community members are used to their current environment. Will find it difficult to adjust to the new environment when resettled. - Should be mindful of the potential conflict that might occur during resettlement, between the host chief and the chief for the newcomers. - Would not like to be added to any existing community; would prefer to be resettled at a new location - If the reservoir will not occupy the area, they would like to be resettled on their own land - There the need for adequate and timely compensation for affected farms, and alternative farmlands be provided for affected farmers - Expect resettlement housing units to be of the highest standard - Sacrifices should be made before shrines and other deities moved for relocation - Support should be given to transport animals to new locations - Concerned that short access routes across the river to neighbouring communities such as Gambaga, Langbesi, Samini etc. will be impeded by the reservoir - Expect the project to expand fishing grounds and increase the stock of fish - Would like to be resettled near Buing - The new site should have enough farmland to serve the needs of all affected farmers - The new resettlement site should have access to the irrigation facility to enable them engage in dry season farming - The new location should not be farm from the reservoir because they want to continue their fishing activities
		Nampoan Tambela	0548128739		
		Moari Issifu	0553357153		

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5	Zongoyiri	Thomas Akugri:	0246173494		- The Chief and elders said the river is their god, therefore the government should do something to appease their gods before construction work starts. - The community uses the river as a means of transport to other places like Garu, so they are asking what the government would do to ensure that this means of transportation is not stopped.
6	Kulunga Chief & Elders and Community	Naa Baba (Regent)	0548761737	18th & 29th June 2020	- Compensate Chiefs for lands to be lost and services by subjects. - Ensure fair employment opportunities. - Identification of areas for resettlement be mutual. - If impacted the community would like to be resettled at a new location; would not like to join any other community. Would like the chief to retain his authority at the new settlement - The project should ensure that the new location has arable land for farming - Would also like their shrines and key heritage rites to be relocated to their new settlement - Would like to be resettled between Wulugu and Karaminga - Expects the project to provide regular power to communities in the area - Expects the irrigation component of the project to promote farming all-year-round
		La-ambaza Manmi	0242877296		
		Kpatabil Tamale			
		Mohammed Ziyaba			
		Awuni Tibanabemi	0556000401		
		George Abanga	0209195643		
7	Kparikpiri Farmer's Group	Yidana Mejida	0502005003	29th June 2020	- Want adequate compensation paid to affected farmers - Alternative farmlands need to be provided for affected farmers to farm - What happens to fallow land? Will compensation be paid for it as well? - Land ownership and services/allegiance of subjects to chief in new resettlement.
		Abdul-Karim Mikaila	0509577296		
8	Suhuluya Chief and Elders at	Tia Samduna (Chief)	0505620725	30th June 2020	- Concerned about the potential loss of farmland which will deprive people of their livelihood - All property destroyed by the project have to be compensated for - The project is expected to have a positive effect by creating employment opportunities and increasing the fish yield of the river. - Could also create more competition from well-resourced fishermen from other areas. - Call on the Project to get stronger and bigger boats for fishermen after completion of the dam in order increase their productivity.
		Wumi Issah	0504820462		
		Tia Siifu	0504867434		

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					- Also, advocate for enactment of rules to prevent too many people from coming to fish in their water space.
9	Gubio Community	Naa Salifu Lasimi Kolgu Issahaka Kojo	0508983783 0508678457 0203131452	30th June 2020	- VRA needs to give advance notice to people before resettlement activities commence - People need to be educated on the extent of project influence - Adequate compensation has to be paid for loss of land and property
10	Kpatusi Chief and People	Joseph Naaba:	0554283781	6th July 2020	- Loss of farmland and economic trees. - Issues of resettlement should include community members. - Communities located in valley areas around the river should be consulted.
11	Achienga settlement	Francis Vondee Mawutor Domeh Abdulai Fuseini			- Fish stock has declines as compared to the situation in the early 1990s - Hopeful that the reservoir will create conducive breeding ground for fish in the area and increase fish stock - Currently, debris carried by the river from upstream damage fishing nets and killing fish. This can be a nuisance to the dam if not properly managed. - Concerned that community access route to across the river may be impacted by the reservoir - In case of resettlement, would like to be relocated at Gbala, at the edge of the mountain. This location is ideal because it is not far from Gambaga and will also be close enough to the reservoir to enable them continue their fishing activities. - Hopeful that the reservoir will increase the fish stock and enable fishermen increase fish catch. - The down side however is this could attract more fishermen to the area and thus put pressure on the local population.
12	Karimenga Community	Alhassan Sandoo Pipilso Nyema James Azumah	0245790733 0542383563 0249592261	7th June 2020	- It is important that community are given information about early so they know what is going on at each stage of the project - Would like to know if the dam will not flood the road and create problem for road users - When will the project start? Will people from the community be engaged to work on the project?

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13	Kurugu Chief/Elders and Community	J.B.Suleman (Chief) Mumuni Adamu Suleimana Fuseini Alitu Yidana	0203510959 0503324375 0203510959 0245407740	6th & 13th July 2020	- Would like to know why the dam being constructed on Kurugu land, bears the name of Pwalugu; can the name be changed to Kurugu Dam? Concerned that certain development projects associated with the Project will end up benefitting Pawlugu instead of Kurugu because the former might be regarded as the host community - On the issue of compensation, would want to know if uncultivated farmlands would also be compensated for. - Would like to know if houses would be affected; if so will compensation paid to affected persons? - Would want to know if community gods/deities would be compensated for in the case, they are impacted by the project. - The project name should reflect Kurugu where the project is taking place. - Kurugu should be developed as compensation for land and others. - Lands that are not farmed, tradition sacred groves must be compensated for. - Traditional gods must be relocated.
14	Gbeo Chief & Community	Chief Kurugu Baenitm Kwame Yinzee Manzi Puaoso	0204017681 0241154035 0559478400	8th July 2020	- Concerned that the community will be displaced by the project - Farmlands along the riverbank is the most fertile part of the land. Farmers losing their farmland as a result of the project should be assisted to get alternative land to farm - Local should be employed on the project - Community members need to be informed about the project

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15	Kpatusi Chief and Elders	Tindazoh Naabe Joseph Naaba Dibipuriba Baba	0595035694 0554283781 0504478740	14th July 2020	- Would like to know how the project would impact the upcoming generation since they are likely to lose all their farmlands. - Prayed for the project implementation to benefit the youth and not put them at a disadvantage. - Some herbalists wanted to know what becomes of them and their trade because the herbs they use in their trade is peculiar to the Kpatusi area. - Concerned about displacement deities who dwelled in the community. - Concerned about the potential loss of farms and farmlands as well as the shea trees which have been nurtured for ages - Action needs to be expedited on electric poles that were erected in the community three years ago, in order that the community will be connected to the national grid. - Need more time to deliberate over the issue of potential resettlement to enable the community determine the next cause of action.
16	Timpela			16th July 2020	- The project is expected to boost local economic activities and improve the power situation. - The irrigation component is also expected to improve agricultural practices and increase income levels of farmers - Job opportunities should also be created for the youth - Concerned about the potential influx of people into the community and its attendant social issue such increased crime and violence as well as prostitution
17	Guzulungu Community	Mahama Naaba Hon. Musah Yakubu	0501980844 0248803369	16th July 2020	- Expect the project to create the enabling environment for farmers to engage in dry season farming especially vegetables - Electricity supply expected to be stabilized in the district as a result of the project - The project will also boost fishing activities because the reservoir will expand fishing grounds - Expect the project to create more employment opportunities for people around the dam - Communities need to be continuously engaged and informed about issues surrounding the project

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		Mahama Marizuk	0501980844		- Concerned about potential displacement of people. Would like to know what happens to farmers and other people who will be impacted by the project. Will compensation be paid? Will people be resettled? - Impacted farmers should have access to the irrigation facility - Chief and people of the community are willing to host displaced people - The project needs to take local content issues seriously when making considerations for employment, skills development and other programs
18	Namoranteng Public Meeting	Mbabila	0506891620	6th August 2020	- Would like to know what they were to do if they found a survey pillars on their farm. - Appeals to the project managers to help the community eliminate the threat posed by elephants. - Expressed apprehension about the project because according to his estimation, the dam water could inundate the community entirely. - Expressed the hope that the project could help employ the teeming youth who were without any jobs.
		Abugiri Wayi	0246941367		- Not familiar with the project or heard about it. - Concerned about the impeded access the dam could pose to the community; the concern was about the engagement of trade and other economic and social interactions with communities on the other side of the White Volta i.e., Binaba and Zebilla. - Some community members are engaged in mining activities on the Red Volta
19	Timonde Chief and Elder	Naba Atiah Anyare Abugri:	0543651330	9th & 17th August 2020	- Boundary pillars were within areas that are covered by the annual flooding. Would like to know if the pillars could be relocated to areas that were much closer to the community. They argue that after the construction of the dam the water will rise to areas much closer to the community. - Concerned about the locations of the pillars because some farmlands beyond the survey pillars get flooded. Felt it was unfair for such farms not to be captured within the buffer. - Would like to know when the official valuers would visit their farms; concerned that if the valuers arrive in the dry season, a lot of farmers will not be attended to; this is because most farmers do not visit their farms during the dry season.

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					- Would like to know what to do or who to consult when one wanted to be employed on the project. - Would like to know if the road network from Bolgatanga to the project site would be affected; if so, where will the new road be? - What happens to the vegetation and economic trees that will be inundated by the reservoir? Would like to know if they could take advantage of the situation and start harvesting these economic trees. - Concerned about access across the river after the project. Currently community members cross over to the other side of the riverbank to farm or visit other communities. - Suggests that the lines of communication between the community and project managers be maintained to ensure a good working relationship. - Farmers wanted to know if they could continue farming at the places. - Chief approved of the project. - Ensure that PAPs are consulted in a transparent manner and are adequately compensated - Community members should be assured that their interests will be protected
20	Takore Chief, Elders and Community	Thomas Apandago:	055682157	1st, 10th & 20th August 2020	- What happens to people who haven't been able to farm this year? Will their farms be measured for compensation? - Will farms in the forest also be measured for compensation? - Pleased with the irrigation component of the project due to the prospects for farming that it presented. - There was major concern about the destruction of economic trees by the project. - Concern that the major deity (Buru) which is close to the river might be inundated by the water. Pleads with authorities to assist them with the necessary items for the rites to enable relocation. - Some bury their dead near the river and therefore want to know what happens to the remains of their ancestors. - Would like to know how they will be able to commute to neighbouring communities across the river such as Zongoyire, and Nalerigu after the project. - Concerned about the risk posed by the expanded dam reservoir to the community especially children.

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					- Would like to know if compensation will be a one-off payment or monthly or periodic. Prefers periodic payments since their lands are ancestral lands and therefore it is important for generations to benefit from it - Would like to know how soon the project will take off. - What happens to the forest resources like wood for roofing and building, and the teak plantation along the riverbank that will all be inundated with water? Especially worried for the younger generation. - Some of the anticipated benefits of the project include the all-year farming that will be occasioned by the irrigation component of the dam construction, as well as the development that projects of such magnitude bring. - Upbeat about the prospects for employment and the provision of social amenities. - Some fisher folks were also expectant of increase in the fish stock.
21	Kugrasia Pubic Meeting	James Ayariga	0248682157	11th August 2020	- Would like to know when the actual dam construction will be completed? - Need confirmation on whether compensation will be monthly periodic or one-off payment? - Concerned they will be cut off from other settlement across the other side of the river when their current crossing points get inundated after the project. - Will the community be connected to the national grid after construction? - Would like a bridge over the dam to serve as a new route to the communities cut off by the dam, such as Garu and Tempane. - Will uncultivated farms be compensated for? Again, they wanted to find out if they could continue with their farming activities after our visit. - They requested for outboard motors to be able to cross over the expanded river. - There was heated debate on the status of “taxes” they receive from communities like Garu, Songo, Bawku, Zoore, and Nankpanduri at the end of every farming season, for farming on their lands. Since these lands will be no more after the construction. - They wanted to know what happens to the economic trees like mangoes, mahogany and cashews that will all be destroyed. - They also wanted to find out what happens to them if the Bagre dam is spilled

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					- They requested for a school in the community to make it easier for their children who always have to cross the river to school - They identified some benefits of the project to include; engaging the youth in alternative livelihoods, and the increase in the fish stock to help the nutritional needs of their children as well as enough water to raise their livestock.
22	Nakpanduri	Hon. Mensah (Assemblyman):	0246474858		- Area marked out by surveyors does not coincide with flooded areas. - Farmers should be provided with information on the project regularly
		Nuanleeb Taana	0248268231		
		Laar Jakper	0541252332		
		Sugru Laribik	0547099958		
23	Namasin Farmers Group	Seidu Hamidu	0540845515	2nd August 2020	- Replacement of investment made in farming. - Implications of project on livelihood.
		Adam Issaka	0249203590		
24	Pwalugu Chief, Elders & Community	Norbert	0245378733	11th June & 2020	- Concerned that even though the project is named after Pwalugu, there is no sign to show that any project infrastructure will be located in the community. The community needs explanation. - Chief and Elders promised to appoint some youth to accompany the team to bush - Predominant occupations in the area are farming and fishing - Other livelihood activities in the area include quarry, rice processing etc - Farmers asked to know how compensation will be paid - Ensure that economic trees are also compensated for

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
		Abunga	0270148636		- Eagerly waiting for the Project to start - Need more frequent project updates - Concerned about the possibility of population influx and its attendant problems such as pressure on community amenities, prostitution and STIs. - Would like to know what happens to those who farms along the bank of the river after the project - Concerned about safety issue along the weir, especially with the regards to children - Expects the project to help facilitate access to electricity for every household in the district - Concerned that fishing grounds will be disturbed, especially during the construction of the dam - The project shout support fishermen and farmers with inputs such as fishing gears, water pumping machines, tractors etc. - The project is expected to create job opportunities for the youth - Alternative livelihood activities and support programs suggested include business training, dry season vegetable farming - Have high expectation of the irrigation program
		Enoch	0540852884		
25	Arigu Community	Hon. Peter Kouzoni	0547067307	23rd July 2020	- Aware of the project and is looking up to its commencement - A lot of people farm along the river bank because it is very fertile and suitable for all-year farming - People travel from Navrongo, Bolgatanga and other neighbouring communities to farm here - Flooding of farms is a major issue here - Concerned about population influx and its attendant social problems - Some people are already coming to the area to buy land in anticipation of the project - Concerned about the possibility that the weir might impede current access routes to neighbouring communities
		Emmanuel Mbah	024149878		
26	Arigu CHPS Facility	Victor Amaah (Principal Enrolled Nurse)	0242566260		- Is aware of the project and fully supports it. Project proponents however need to ensure that the right things are done - Concern about the possibility of population influx and its attendant social issues such as STIs

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
		Georgina Bonsarigya (Health Information Officer)			- There is the need to regulate construction of buildings close the river bank - Expects the project to boost the economy of the communities and wellbeing of people in the area through the provision of health facilities
27	Bisigu Community	Atia Wurana Nyabila	0249605598	22nd July 2020	- Aware of the project last year but not very familiar with details - Farmers from both Bisigu and Arigu farm along the river because it the most fertile part of the land in the entire area - Would like to know if the water level will rise to the community after the project - Would want to know if the project will impact their farmlands, especially areas along the White Volta. If so, what support will be given affected farmers - Concerned that the weir will inundate farmland and shea trees which are the source of livelihood for women - During period of flooding (usually around July/August), the water level could rise over 4km from the river bank - The project needs to extend the irrigation project to farmlands nearby for others to benefit from; local farmers have to benefit from the project just like farmers in Burkina near the Bagri Dam - The project needs to improve access road to farming areas - Expects the project to create employment opportunities for the youth in the area - Would like the project to support women involved in shea processing with equipment and finance; provide scholarship opportunities for students. - Farmers should be given suitable alternative farmlands if they are displaced to enable them continue their farming activities
28	Bangbu Chief and Elders	Tia Yamusah (Chief)	0208520699	20th July 2020	- Would like to know when the project will commence - In what way would the community be affected by the project? - There is the need to employ people from the region because they will suffer any negative consequences of the project
		Bugdow Tukuri (Assembly Members)	0247558639		
29	Tangbini Community	Alitu Bukari Wusike (Chief)	0551800611	15th July 2020	- Would like to know if farmers will be compensated the land gets flooded by the reservoir

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
		Mahama Fuseini: (elder)	0245007727		- What measure being put in place to ensure timely project information gets down to the rural communities - Women in contract mining across the river fear loss of jobs - VRA needs to engaged the local to work on the project
30	Timpella Community	Yakubu Baba Rozale:	0208931599	17th July 2020	- Worried that returnees from displaced areas could create problems for the host community e.g., pressure on local facilities, and other social issues - Community members need to be updated on the developments going on regarding the project. - All affected farmers should be identified and compensation paid to them; should also be given alternative farmland to enable them continue their farming activities
		Timpella Naaba	0206308307		
31	Samini Chief and Community	Hajia Abdulai Seriga:	0249630499	17th July 2020	- Expects VRA to engage many unemployed youths on the project - Concerned that the reservoir will flood and take up grater part of farmlands used for their livelihood - Would like to know what measures will be put in place to ensure that impacted farmers are identified and compensated
		Salifu Manlokiya	0551686681		
		Sampa Abuba	0553468126		
		Sampa Fuseini	0544860332		
32	Digaari Community	Auntie Yaa, Efo Kluvi and entire community	0204956468	11th July 2020	- Concerned about the impact of the project on fishing activities - Community does not wish to be resettled at same place as with Kpakpiiri community
33	Santeng Chief, Elders and Community	Ginga Nkaye, Yinit Kinchan, Baala Yenzre, Mozor Bangor, Akwasi Dimbokol		29th July 2020	- Concerned about the possibility of mosquitoes breeding in the area as a result of the reservoir - Concerned about the loss of farmlands that is likely to occur. Farmers need to be adequately compensated
34	Bapela Chief, Elders and community	Iddrisu Issah:	0557335290	27th July 2020	- Consultation should not stop after the ESIA but rather continue through the project - Concerned that farmlands along the river will be submerged by the reservoir - Would like to know if the community will be displaced.
		Noaba Bapela			

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
		Ziaba Borzina			- One of the major concerns of the community is the destruction of farm by elephants. Worried the project will worsen the situation because the area they tend to feed will be inundated by the reservoir - Wildlife Officers should take steps to ward off elephants from disturbing the community
35	Manga Chief and Elders	Issah Salifu:	0206589163,	14th July, 2020	- Some inhabitant farm far away along the river - All affected farmers should be identified and included in crop compensation process
		Sheini Yidana			
		Abugri Abu			
		Ibrahim Salim Morge			
		Adam Dabaga			
36	Kparipiri Community	Yidana	0502005003	17th July 2020	- Concerned that farmlands and forest resources will be inundated by. The reservoir. New resettlement community should also have similar resources and accessible to project affected communities - The project should ensure that community members, especially the youth, are also engaged to work on the project - Livelihood restoration program should include replacement land for those who might end up losing their farmlands
		Abdul Karim:	0509577296		
37	Namasim Community	Adam Issaka	0249203590	2nd August 2020	- People mainly farm along the riverbank, which is the most fertile part of the land in the community. Land outside this area is rocky and not suitable for farming - Would like to know what measures to be taken to ensure that farmers have access to alternative suitable farmlands to enable them continue their farming activities - Will compensation be paid for only crops? What about the land? Where will people farm after the expropriation? - Some farmers have farmhouse where they live sometimes to farm. Most of the farmers however live in Namasim and walk to their farms daily which takes about 2 hours

NO.	STAKEHOLDER GROUP	CONTACT PERSON & DESIGNATION	CONTACT DETAILS	DATE	CONCERNS RAISED/INFORMATION RECEIVED
38	Nakpanduri Farmers	Laar Jakper	0541252332	2nd August 2020	- Welcomes the project but do not understand how it can benefit them - Concerned that reservoir will raise the water level and spill over the Nakpanduri-Garu Bridge, disrupting vehicular traffic. - Farming is the main source of livelihood; most of the farms are along the riverbank. Dry season farming is undertaken by most farmers
39	Kugrasia	Assemblyman	0246253355	11th August 2020	- Would like to know how long it will take the project to be completed - Farmlands along the river is most sought after by everyone. What happens to farmers to be displaced by the project? Will alternative land be provided for them to continue farming? - Will compensation be one-off payments or staggered over a period of time? - The shortest route to Benaba will likely be impeded by the reservoir. Would like to know how this could be mitigated since this is a busy road. - Expect the project to bring electricity to every home in the districts along the dam. - Most farmers are engaged in vegetable farming during the dry season. There is therefore the need to a small-scale irrigation scheme upstream - Concerned about the loss of shea trees which is the main source of livelihood for women - Expects the project to create employment opportunities for the youth both during the contraction and operation phases - Would like to know if the combined effects of this project and that of the Bagri Dam will not worsen the flooding situation in the area - Expects the reservoir to increase the fish stock and create better opportunities for fishermen - The government should add corporate social responsibility to the project to support deprived communities near the dam e.g. scholarships, eater and sanitation projects, and livelihood empowerment programs

APPENDIX O. : FOCUS GROUPS

O.1. Consultations of Women

Eleven focus groups were organized from July to August 2020 in the eleven villages affected by the PDMP.

Table Error! No text of specified style in document.-~~15~~ 4**: Summary of answers collected during Women Focus Groups**

	Arigu West Mamprusi	Nungu Talensi	Suhuluya West Mamprusi	Gubeo West Mamprusi	Pwalugu Talensi	Timpela East Mamprusi	Old Gbeo West Mamprusi	Namiyala West Mamprusi	Zomela Talensi	Takore Garu Tempane
Education	Higher degree completed: 50% Primary school, 25% SHS, 17% JHS, 8 % no formal education, 0.1 % tertiary. All children of school going age are in school.	Higher degree completed: 67% no formal education, 17% Primary school, 17% SHS. All children of school going age are in school.	Suhuluya has a primary school. JHS pupils go to Wulugu to attend school. All children of school going age are in school. Both boys and girls are encouraged to go to school.	All children of school going age are in school	Some children of school (6 to 15 years) going age are not in school mainly due to teenage pregnancy and hardship or inability to provide basic education materials for their wards.	1 primary school. Higher degree completed: 91% Primary school, 9% JHS, none Tertiary. Not all children of school going age are in school; some girls have to stay at home to support their family to look after their brother in school.	Higher degree completed: 83% no educational background, 8% Primary school, 8% SHS. 0% JHS and Tertiary All children of school going age are in school.	Higher degree completed: 69%no educational background, 15% primary school , 30% JHS, 10% SHS, 5% Tertiary All children of school going age are in school.	Higher degree completed: 50.0% JHS education, 30% SHS, 20% primary, 0% Tertiary. All children of school going age are in school.	Higher degree completed: 67% no educational background, 23% primary, 10% JHS, 0% SHS and Tertiary. All children of school going age are in school.
Activities of women	Main: Farming, petty trading, fish mongering Secondary: shea butter preparation, charcoal selling	Main: farming, shea gathering Secondary: petty trading, fish mongering	Main: Farming, collection and processing of shea nuts, charcoal production, and gathering of firewood (not sold but used for cooking or processing shea). Secondary: rear livestock -only sold during times of need.	Main: farming and Shea nut picking Secondary: petty trading.	Main: farming and trading	Main: farming, picking shea nut and processing. Secondary: petting trading.	Main: farming Secondary: petting trading, hair dressing	Main: farming Secondary: trading	Main: mining Secondary: farming, petty trading	Main: farming, petty trading Secondary: livestock rearing
Source of Water	Main: Borehole (dries out during the year) and river -White Volta – (available throughout the year) Water quality is poor and often contains a tiny black insect	Borehole, which loses its quality during the wet season. Water is available all year.	Improvised wells water from the White Volta which takes about 45 min to fetch - available throughout the year. Untreated source but people cannot afford sachet. Lacks potable water facility.	Main source: river water - available throughout the year - not really clean	Main: dug-out - not available throughout the year - clean but has odour in it	Main: smal well - not available throughout the year - Untreated and not clean. Only women fetch water for the household.	Main: Borehole, river water - available throughout the year – the quality is ok.	Main: Borehole - not available throughout the year – not clean	Main: river water - available throughout the year – not clean.	Main: Borehole - available throughout the year – quality is fairly good
Sanitation										
Refuses	Every household has a dug out pit where refuse is dumped and occasionally burnt.	Every household has a dug out pit where refuse is dumped. Dumped refuse used as fertilizer.	No designated refuse dumping site; rubbish thrown into the bush.	Burnt solid wastes.	Members dump near them where they dispose solid wastes.	Members dump refuse behind the houses	Most households dump refuse indiscriminately and occasionally burnt.	Most households pile up refuse and later burnt	Most households dispose of refuse in open space	Wost burn solid wastes
Toilets	All households in the community have toilet facility.	Most households do not have toilet facility => open defecation.	No public toilets. Individual homes have their own private toilets. Liquid waste is thrown outside compounds.	Most households do not have toilet facility => open defecation.		80% of households have small pit latrines near homes.	All households have pit latrine toilet facility.		Most households do not have toilet facilities => open defecation	All households have pit latrine toilet facilities
Access to Land	Mostly men are entitled to land, if demise of a spouse the land reverts to the woman who can farm on it. Disputes and clashes over land ownership occur when the original owners pass on and the ownership of the land is doubted. Single women can also consult the chief and elders to get access to land.	Mostly men are entitled to land but some single women own land. The chief (the custodian of all the land) is consulted and the land is released to whoever needs it.	Land is available for every community member to farm. Men tend to have the advantage in terms of land ownership in the family; women get access to land through male relatives. Disputes or clashes over land ownership is rare. When they occur they are resolved by the chief.	The chief (the custodian of all the land) is consulted and the land is released to whoever needs it. There are no land disputes or clashes in the community.		Mostly men are entitled to land in the community. Women do not own land but get farmlands from their husbands or male relatives. The chief is the custodian of the land. Visitors acquire farm lands by appealing to the chief.	Most men are entitled to land in the community but women can acquire farm lands through their husband. Single women can go to the chief and elders for land to be released to them. Disputes and clashes are not very common in the community.	Both men and women are entitled to land which given out by the chief of the community. Disputes and clashes are not very common.		Both men and women can own land in the community which given out by the chief of the community. Disputes and clashes over lands are very common.
Availability of food	Food is scarce due to the flooding. Rice, groundnut, bambara beans and yam are costly.	Beans, yam, cassava, groundnut and onions are expensive. In general other food items are very cheap.	Food is available all year round. Bean (including soybeans) are expensive.	Food is available but some foods like maize, beans and soya beans are more expensive.	Food is available and price is moderate in the community. Groundnut, beans, rice and millet are expensive.	Food is expensive during the planting season and less expensive during the harvesting season. Beans, groundnut, and onions are expensive in the community.	Food is often affordable however when there is drought food to become expensive. Groundnut and fish are costly.	Food is affordable. Fish is expensive in the community.	Food is expensive and the least food families can least afford is rice.	Food is cheap and food that is costly is rice.
Social issue										
Crime and violence	Increasing issues	No issues	Few incidence of domestic violence involving couples.	No issues	No issues.	Increasing issues.	Rampant violence specifically in a place called Wuwan where people are often robbed and murdered.	Increasing theft	Increasing crime rate	Decreasing violence and crime rate
Tennage pregnancy.	Prevalent issue	No issues	Incidence of teenage pregnancy and early	No issues	Increasing issues	Very prevalent.	No issues.	No issues.	Very prevalent	Very prevalent

	Arigu West Mamprusi	Nungu Talensi	Suhuluya West Mamprusi	Gubeo West Mamprusi	Pwalugu Talensi	Timpela East Mamprusi	Old Gbeo West Mamprusi	Namiyala West Mamprusi	Zomela Talensi	Takore Garu Tempane
			marriages among teenagers.							
Health										
Common sicknesses among children	Malaria, diarrhoea, boils	Malaria, fever	Malaria, skin rashes, diarrhoea, joint pain, headache, eye problems.	Malaria		Malaria, stomach pains, diarrhoea, headache.	Malaria	Malaria	Malaria and cough	Malaria and diarrhea
Common sicknesses among Adults	Joint pains, chest pains, malaria and hypertension.	Joint pains, chest pains, malaria.		Skin rashes and malaria		Malaria, eye problems, waist pains	Joint pains, chest pains, itchy eyes	Malaria and waist pains	Malaria, upper tract respiratory disease	Malaria, cough, joint aches
Accidents/ Health risk	Road crashes.	work activities (farming and fishing) - rashes, dust.	Motor accidents. Work activities - pesticide usage, working under the sun for prolonged period, cutlass wounds sustained during farming.		Work activities: (farming and fishing) snake bites. Noise from the quarry causes cracks in buildings and dust from quarry.	Work activities (farming and fishing): dust during the dry season which causes discomfort in breathing.	Work activities (farming, fishing): snake bites and dust which results in sore throat and other related ailment.	Work activities (farming, fishing): mosquitoes bites causing malaria	Work activities (farming, mining): upper tract respiratory disease and cough caused by dust. Noise from crushers also affects health.	
*Access to healt*h	The clinic in the community is not well equipped, so they normally go to Bolgatanga which is 30 minutes away	There is a CHPS compound in the community but costs of medications are expensive. To access a clinic, members of the community have to travel about 10 kilometres to Tongo, situation very stressful.	Lack health facility even though Community Health Nurses visit from time to time. Travel to Wulugu (1 hour away) or Walewale to seek medical care. Women do have access to health services during pregnancy, delivery, after child birth, and Child Welfare Clinic. None of the women practiced family planning of birth control.	No health facility. There is a need to build clinics since community lacks one. Travel about 50 km to access a health facility		No health facility. Travel 12 km to the nearest facility at Langbisi which increases their overall expenditure on medical treatment. Heath facility should be built for the community and drugs made more affordable.	The community has a CHPS compound that helps treatment of minor illness. With more serious ailment community members travel 1 hour to Pwalugu Health Center for treatment. Need for education on health related matters.	No health facility. Travel about 14 km to the next town to gain access to health facility. Need for education on health related matters.	No health facility. Travel about 10 km to the next town to gain access to health facility. Need for education on health related matters.	Very difficult to access health care. Travel about 6 km to access to health facility and there is no means of transport. Need for education on health related matters.
Health promotion:		Malaria, malnutrition, diarrhoea, family planning - Information disseminated through information vans and television.		Not aware of any health related promotion	Malaria, malnutrition, diarrhoea and family planning.	Malaria, malnutrition, diarrhea, family planning and sexually transmitted diseases. Disseminated through information vans.	Ghana Health Care Service provides health information promotions. Malaria, malnutrition, diarrhoea, family planning, healthy pregnancy, sexually transmitted diseases. Disseminated through information vans and television.	Malaria, malnutrition, and family planning.	Aware of health promotion taking place	The Health sector mainly provides health information promotions. Information dissemination is through radio. Malaria, malnutrition, diarrhoea, maintaining healthy pregnancy and family planning.
Challenged/ Problem	Lack of money to invest in their livelihood activities, and lack of equipment to process shea for value addition and reduce drudgery.	Unemployment, lack of credit facilities, poor level of education, and poor crop yield.	Lack of money to invest in their livelihood activities, lack of equipment to process shea for value addition and reduce drudgery.							
Ecosystem Services	Shea, Firewood/charcoal, and Honey	Shea, Firewood/ charcoal, herbs, fruits and nuts, fishing, honey, and game.	Shea, Firewood/charcoal, *Salenvama, Bitor, Tokara koka, Sugla fruit, Kpara fruit, Shishibi fruit, Dawadawa*, and Honey.		Shea, Firewood/charcoal, game and honey.					
Perception about the Project										
Positive	Affect health if the existing clinic is expanded.	Fishermen will get a lot of fish catch.	Good health care system, potable water facility, skill training and employment opportunity for the youth, and improved road.	Create job opportunities for the youth in the area and support farmers to be more productive.	Potable drinking water and electricity will be provided	Boost local economic activities and improve the power situation	Affect health if the existing clinic is expanded			
Negative	The dam construction will increase crime and violence as well as prostitution leading to more diseases. Affect the situation of land acquisition for farming.	Water from the dam will submerge farmlands. Influx of people could result in increased crime and violence as well as prostitution and introduce more diseases.	Impede their access to farmland and displaced from their current location Shea tree, baobab and other non-timber forest resources such as herbs, bush meat, etc. will also be affected. Potential risk of kids getting drown in the lake. Encourage people to migrate to the area and increase cases of	Deprive farmers of their fertile land along the bank of the river Bring more diseases like HIV/AIDS. Affect health if farms are resettled very far from households.	Make land very scarce. Influx of people might bring more diseases like HIV/AIDS, put pressure on housing and health facilities.	Influx of people into the community might increase crime and violence as well as prostitution	Influx of people into the community might increase crime/violence as well as prostitution and introduce more diseases like HIV/AIDS.	Make another land acquisition to be difficult. Accidents could occur as children especially could fall into dam and lose their lives. Influx of people might increased crime as well as prostitution, introduce more diseases like HIV/AIDS, cultural values may be corrupted, cause housing to be expensive.	Make land acquisition difficult. Influx of people might increased crime as well as prostitution and ntroduce more diseases like HIV/AIDS, cause housing to be expensive.	Affect land availability and will eventually cause hunger. Influx of people could increase malaria incidenceand affect lands for housing.

	Arigu West Mamprusi	Nungu Talensi	Suhuluya West Mamprusi	Gubeo West Mamprusi	Pwalugu Talensi	Timpela East Mamprusi	Old Gbeo West Mamprusi	Namiyala West Mamprusi	Zomela Talensi	Takore Garu Tempane
			teenage pregnancy, broken marriage, crime and health related issues							

O.2. Consultations of Fishermen

Six focus groups with fishermen were held in July and September 2020. The main discussed topics are summarized in the Table her after.

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	Arigu West Mamprusi	Pwalugu Talensi	Suhuluya West Mamprusi	Nungu Talensi	Kosanaba Bawku West	Achienga East Mamprusi
Importance of fishing		Fishing community. About 50% of households are actively involved in fishing. Fishermen from the community also farm to supplement their income. Fish is consumed every day by households.	Fishing is one of the major activities. Most important source of income for about 8% of households in Suhuluya. Fish is consumed by every household.	Fishing community. About 20% of household income is from fishing. Fishermen from the community also farm to supplement their income. Fish is consumed every day by households.	About 95% of household income is from fishing. Fishermen from the community also farm to supplement their income. Fish is consumed every day by households	Every household is involved in fishing. The elders of the village pointed out that fish stock has declined since 1990. Inhabitants also engage in crop farming to supplement their income.
Who are Involved	Bisigu Regent serves under Arigu chief since all the land at Bisigu up to the bank of the river (including farmlands) belongs to Arigu.	Ethnic groups: Hausa (50%), Ewe (25%), and Busanga (15%). Men do the actual fishing work. Family and hired labourer are used to support fishing activities. The role payed by women is processing and selling. Sometimes, children support their parents by untying entangled nets or transporting fish. Most of these fishermen are also crop farmers. The fishermen belong to 3 fishing cooperative or association, namely Ayidecheo, Dongobey, Matantud (for women)	Ethnic groups: Ewe and Mamprusi Men are responsible for the actual fishing while the women do the process and selling. Sometimes children are seen taking part in the fishing.They sometime hire peoples from the community to assist them in their fishing.	Ethnic groups: Mamprusi, Hausa, Tampulsi, Talensi, and Kusasi Men do the actual fishing work. Some hire labour from the community to support them. The role played by women is the processing and selling. Children are also involved in fishing in this community. There is no fishing cooperative or association in Nungu.	Ethnic groups: Hausa, Kusasi and Ewe About one hundred people is fishing. 70% are men, 20% women. 10% children. Men are into actual fishing while the women do processing and selling. The fishermen mostly hire people from the community to assist with the fishing activities the people fish in both the Red and the White Volta.	There is the “Achienga fishermen group”, its major responsibility is to assist individual member to purchase equipment for fishing. Men are fish while women process and sell fishs. There is a fish processing co-operative in the community.
Fishing Zone	Biggest fish ponds is Gbasikoma, followed by Orieng. The rest are Gabare, Blukari, Guyelge, and Kobia, all of these are communal resources. About 10 individuals also have small fish ponds on their farms	Upstream as far as Kubore near Bawku, and downstream to Sariba and Moyee. When the water recedes after the river has overflowed its banks some fishermen travel from as far as Togo, Volta Region and Zabzugu in the Northern Region to fish here.	People fish from Suhuluya downstream to Kurugu and upstream to Abubakura. Fishing in the community is done in the same area irrespective of the season. People from other communities like Nungu and Kparipiri also come to Suhuluya to fish.	Upstream to Achienga and downstream to Pwalugu. Other fishermen from other communities like Pwalugu, Tolla, Singa and Buing also come to the same location to fish.	During the raining season, people fish close to the community, but move to different places during the dry season. People from Binaaba, Zongoyiri, Boya and Zebilla also come to fish in the same location.	Upstream Korklugu and downstream Krugu.
Fishing Period	February to April.	Main period: June and August (high yield). During dry season, fishermen travel far to get enough catch. Fishing is done during the day and in the night throughout the week. April: low yields because of low water levels. About 80% of the total catch is sold and the rest is consumed at home.	Main period: from February to April - day and night fishing Other month they fish only during the day. From May to December, low yields.	Main period: June and August (high yield). During dry season, fishermen travel far to get enough catch. Fishing is done during the day and in the night throughout the week. April: low yields because of low water levels. About 80% of the total catch is sold and the rest is consumed at home.	Fishing is done both day and night every day from October to February. During rainy season, they don’t fish every day.	Main period: high yields from September to November Low yield in July and August.
Fishing Gear		Wooden boat or canoes, wooden paddles, hook and line, nets and traps. About 20% of fishermen own the boat they use. On the average, 3 people use the boat for fishing at a time.	Drag net, hook and line and traps. All fishermen own their boats. They however rent other boats from people who are not fishermen but own boats. Between 2 to 4 people can use a fishing boat for fishing.	Wooden boat or canoes , hook and line, nets and traps. About 20% of fishermen own the boat they use. On the average, 3 people use the boat for fishing at a time.	Wooden boat or canoes, hook and line, nets and traps. About 90% of fishermen own the boat they use. 10% of the remain rent to use On the average, 2 people use the boat for fishing at a time.	The kind of fishing practiced in this area is the cast net method. Wooden canoe, fishing nets, hook and line, and traps.
Type of Fish	Tilapia, electric eel, mudfish, jinsabla, kopelgor, gamba, konahor, tuliga, tugor.	Mudfish, electric fish, tilapia	Lensi, agbasra, and luwe.	Mudfish, electric fish and tilapia	Eriug, pel, sable, wea, mom, kugun, mgbil, siang, dabaan, and garig	Mudfish, electric eel, and lentil.
Marketing and Processing		About 40% of the fish caught are left or sold fresh, 45% smoked, 10% fried, and 5% dried. Most of the fish is sold (80%) in the community to trader who come to buy; in most cases these buyers wait for fishermen at the river bank. One could make as much as Ghc 5,000 from the sale of fish per week during bumper harvest, and Gh1,000 during lean seasons. The most expensive fish sold are mud fish, which could be sold at Ghc 1,500. The remaining 20% is consumed.	About 60% of the fish caught are left fresh, 30% smoked, 10% smoked or dried. Most of the fish is sold (70%) in the community to trader who come to buy. In some cases, fish mongers send the fish to markets in Wulugu, Janga, Walewale and Bolgatanga. One could make as much as Ghc 1,000 from the sale of fish per week during bumper harvest. The remaining 30% is consumed. There are however some seasons one cannot earn any income from fish in weeks because of poor catch. There is a fish processing co-operative in the community that assist them financially.	About 5% of the fish caught are left fresh, 85% smoked, 10% fried. Most of the fish is sold (80%) in the community to trader who come to buy. In some cases, fish mongers send the fish to sell in Bolgatanga and mining area of Accra, Kejetia and Tarkwa in the Talensi District. One could make as much as Ghc 3,000 from the sale of fish per week during bumper harvest, and Gh100 during lean seasons. The most expensive fish sold are mud fish "zinafo"or cow fish, which could be sold at Ghc 1000. The remaining 20% is consumed.	About 95% of the fish caught are smoked, and 5% fried. About 70% of the fish harvested are sold whiles the remaining 30% are consumed at home. Fishermen could make as much as Ghc 1500 from the sale of fish per week during bumper harvest, and Gh100 during lean seasons. Fish mongers send the fish to sell at Binaaba market. Others come to buy from the village.	About 60% of the fish caught are left or sold fresh, 25% smoked, 5% fried. Most of the fish is sold (80%) in the community to trader who come to buy. In some cases, fish mongers send the fish to sell in Gambaga.One could make as much as Ghc 5,000 from the sale of fish per week during bumper harvest, and Gh 100 during lean seasons. The remaining 20% is consumed.
Fishing Regulation		Fishermen have various rules governing fishing: dynamite and chemicals are prohibited; mesh size of fishing nets should not be less than 2 inches.	Rules prohibit the use of tiny nets, wire gauze, and chemicals for fishing.	Fishermen have various rules governing fishing: strangers cannot just enter the river and fish without permission; dynamite and chemicals are prohibited; and every fisherman is supposed to present fish to the chief every Friday.		Fishermen have various rules governing fishing: dynamite and chemicals are prohibited; net of mesh size of less than 2 inches are not allowed.
Challenges/ Problems		Lack of access to modern fishing equipment, lack of credit facility to procure gear, floods wash canoes and fishing nets away, debris from upstream destroying fishing nets.	Some of the main challenges associated with fishing activities include accidents (due to poor safety practices), and lack of access to modern fishing equipment and credit to support their enterprise.	Lack of access to modern fishing equipment, lack of credit facility to procure gear, floods wash canoes and fishing nets away, injuries/accidents, and declining fish stock.		Lack of storage facilities, flow of debris carried by the river from upstream damage fishing nets and killing fish.
Perception about the Project		Main negative impact: destruction of fertile farmlands; displacement of fishing ground, small-size canoes may be able to withstand the volume of the reservoir/weir; the project	Positive impacts: creating employment opportunities and increasing the fish yield of the river.	Positive impacts: create employment opportunity for locals; create conducive environment to increase fish stock.	Main negative impact: destruction of farmlands. To mitigate the negative effect, the Project should facilitate the acquisition of outboard	In case of resettlement, they would like to be relocated at Gbala, at the edge of the mountain. This location is ideal because it is not far from Gambaga and will also be close

		will attract people to the community, and such population surge may come with its attendant problems such as pressure on community facilities, STIs, teenage pregnancy etc. Main positive impact: create employment opportunity for locals; create conducive environment to increase fish stock. To mitigate the negative effect, the Project should facilitate the acquisition of outboard motors for fishermen, and create access to irrigation facility and tractor for dry season farming.	Negative impacts: create more competition from well-resourced fishermen from other areas. They call on the Project to get stronger and bigger boats for fishermen after completion of the dam in order increase their productivity. They also call for the enactment of rules to prevent too many people from coming to fish in their water space.	Main negative impact: destruction of farmlands. To mitigate the negative effect, the Project should facilitate the acquisition of outboard motors for fishermen, and create access to irrigation facility and tractor for dry season farming.	motors for fishermen, and create access to irrigation facility and tractor for dry season farming.	enough to the reservoir to enable them continue their fishing activities. They hopeful that the reservoir will increase the fish stock and enable fishermen increase fish catch. The down side however is this could attract more fishermen to the area and thus put pressure on the local population.

APPENDIX P.PICTURES OF THE INSTITUTIONAL CONSULTATIONS

Consultation with the Lands Commission, Accra

Consultation with the Forestry Commission, Accra

Consultation with Chief and Elders of Timonde

Consultation with Customary Land Secretariat, Tongo

Meeting with Forestry Commission, Upper East Region

Meeting with Forestry Service Division of FC, Walewale

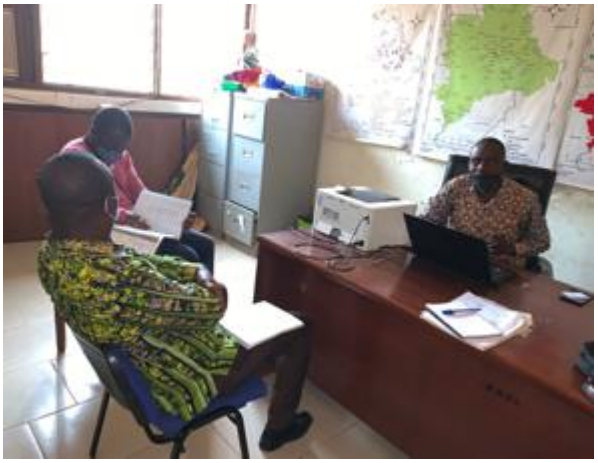
Meeting with the Forestry Commission, Bolgatanga

Meeting with Water Resources Commission, Bolgatanga

Meeting with North East RCC, Nalerigu

Meeting with Upper East RCC

Meeting with Bawku West District Assembly, Zebilla



Meeting with West Mamprusi District, Walewale

APPENDIX Q.PICTURES OF PUBLIC/COMMUNITY INFRASTRUCTURES

Kparikpiri

KP002
Grave
'N10.53166 W 000.74862

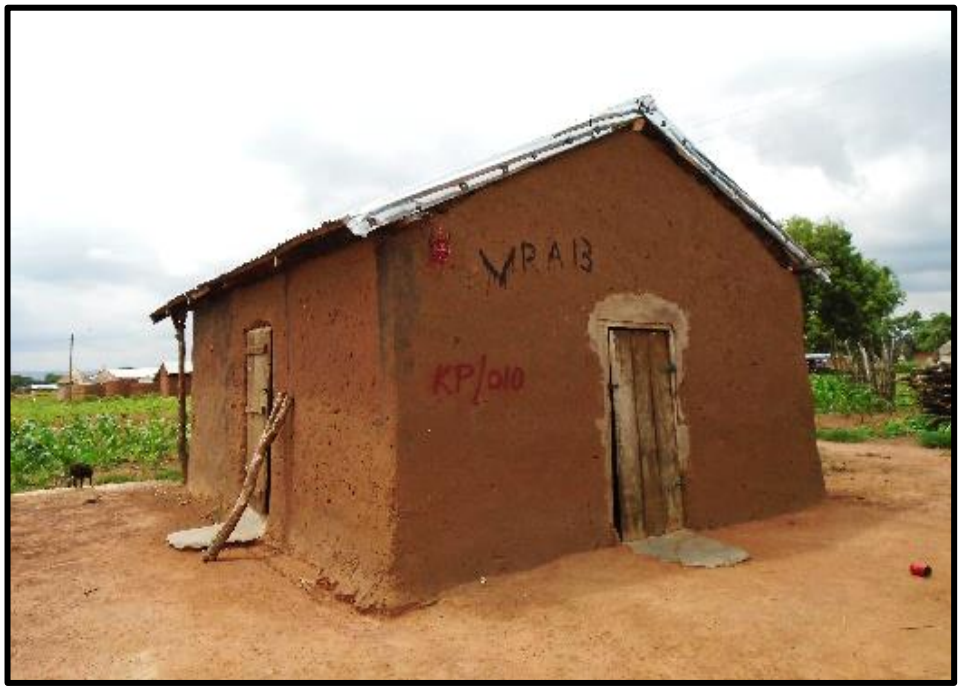
KP003
Grave
'N10.53433 W 000.77591

KPA005
Shrine
'N10.533859 W 000.747809

KP/008
Church
'N 10.53312 W 000.74854

KPA009
Well
'N10.534030 W 000.746597

KP/010
Mosque
'N 10.53329 W 000.74737



KPA013
Classroom Block & Corridor
'N10º32.097 W 000º44.728

KP/A016C
Well
'N 10.53335 'W 000.74468

KP025
Mosque
'N10.532443 W 000.744962

KP/030
Well
'N 10.53209 W 000.74452

KP/031
Community Well
'N 10.53175 W 000.74415

KP/034
Well
'N 10.53296 W 000.74377

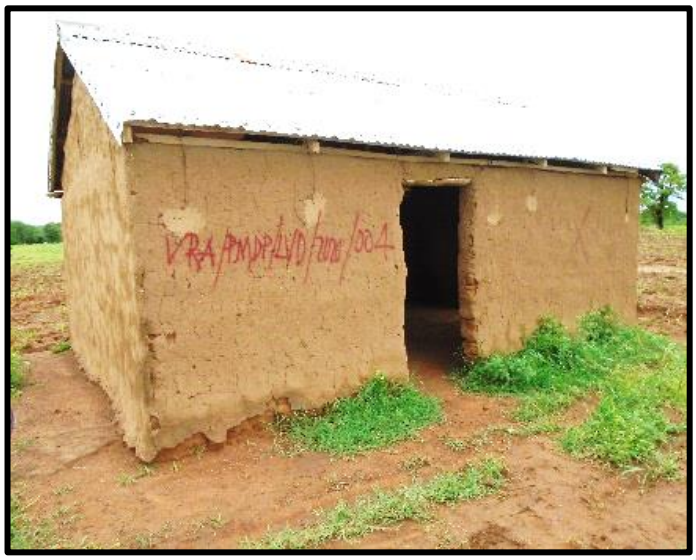
KP/046
Well
'N 10.52851 'W 000.74324

KP/047
Community Well
'N 10.52851 'W 000.74324

Kulunga

KL/002
Church
'N 10˚32.068 W 000˚46.649

KL/004
Church
'X- 1165189 Y-0743279



Suhuluya

SU017
Suhuluya MA Primary School
'N10°30.633 W 000°42.261

SU/001
Church
'N 10.51128 'W 000.70636

SU/025
Mosque
'N 10.51224 'W 000.70591

Nungu

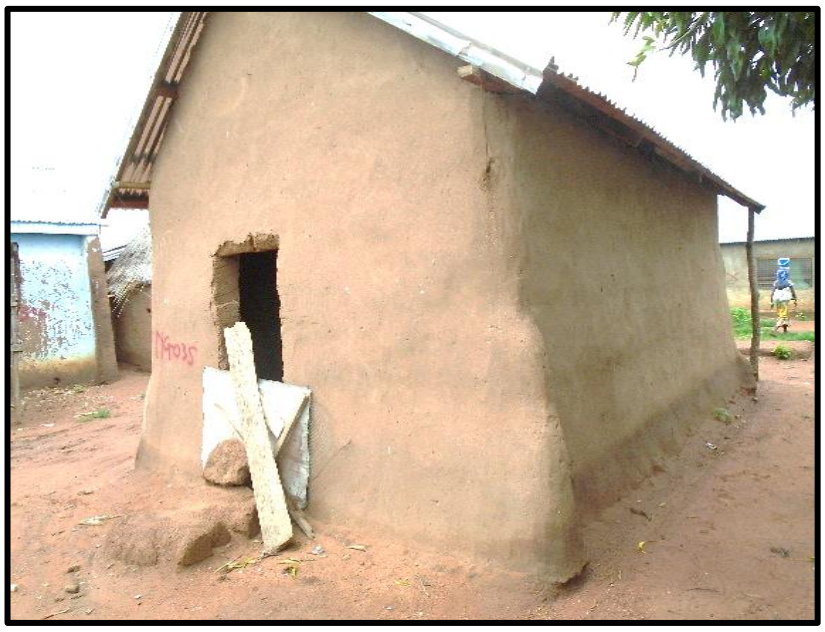
NG002
Ning Basic School KVIP
N10.62465 W000.07859

NG003
Nungu Primary School
N10°33.728 W000°39.210

NG006
Classroom Block
N10^{o}33.679 W000^{o}39.208

NG017
Church
N10.56083 W000.65242

NG035
Mosque
N10^{o}33.483 W000^{o}39.081



NG085
Community Well
N10.55729 W000.65078

NG090
CHIPS Compound
N10.56028 W000.65334

Zomela

ZM039

Mosque

'N10°39. 710 'W 000°32. 566

Namiyala

NA005
Shrine
'N 10˚35.277 W 000˚49.449

NA014
Shrine
'N 10.58823 W 000.82704

APPENDIX R.PHOTOS TAKEN IN THE STUDY AREA

Fulani crazing cattle near Kulunga

Community Well at Kulunga

Transporting charcoal with tricycle in Kparipir

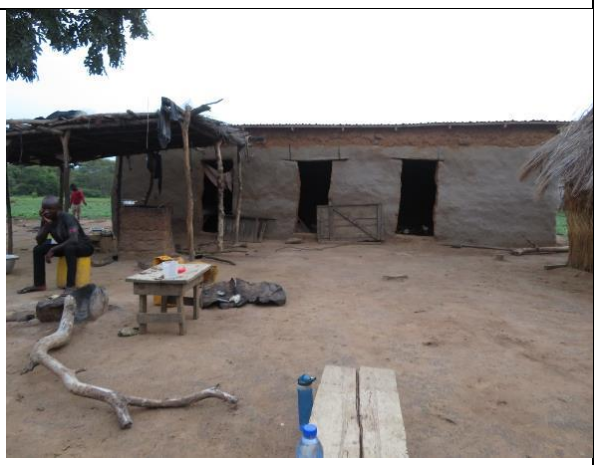
Focus group discussion session in Kparipir

Fulani women fetching water from borehole at Kulinga

View of the White Volta from the Gambaga Scarpe

Fishermen’s canoe at Achienga

Bank of the White Volta at Achienga



Type of houses in Achienga

Interview with Head of Achienga

Shea processer in Bisigu

Engagement with Chief and Elders of Bisigu

Maize farm along the bank of the White Volta at Bisigu farm

Crossing point for people commuting between Bisigu and Sariba

Debris left behind by flood water at Bisigu farming area (about 1 km from the river bank), indicating the height of flood water.

Focus group sessions with Shea processers in Bisigu

Fulani settlement near Pwalugu

Interview with Pwalugu Fulani women

Discussion with Pwalugu women

Focus group discussion session with Pwalugu Fishermen

Engagement with Chief and Elders of Nungu

Engagement with Nungu women

Women engaged in petty trading in Nungu

Local hairdressing shop in Nungu

Cooked food seller in Nungu

Handcraft in Nungu

Nungu Fulani men

Nungu Fulani settlement

Engagement with Nungu Fulani people

Nungu Fulani man with his two wives

Fulani woman with her utensils used for milking, measuring and selling cow milk

Trees uprooted by elephants along the path from Tolla to the river bank

Sankpakura hamlet across the river from Nungu farms

River crossing point from Gubeo to Nungu

Engagement with Bukperinaba

Engagement with Nalerigu Paramount Chief and his sub-chiefs

Stakeholder engagement at Nimasim

Focus group discussion session with Nakpanduri farmers

Men focus group discussion at Zormela

Women in Zormela transporting ore from mining pit to processing site

Interview with women involved in artisanal small-scale mining at Zormela

Ore milling at artisanal mining site in Zormela

Ore processing site

Stakeholder Engagement at Namoranteng

Stakeholder Engagement at Tokore

Well at Tolla