(Annex 2-5)

5. The Marshlands in Ngoma

Contents

1. The Outline of the Ngoma District

(1) Geographic situation

Ngoma District is one of seven districts that make up the Eastern Province. It is subdivided into fourteen (14) sectors, sixty four (64) cells and four hundred and seventy three (473) villages (Imidugudu). The district covers an area of eight hundred sixty seven point seventy four square kilometres (867.74 Km^2). It is limited by Rwamagana District in the North-West, by Kayonza District in the North-East, by the District of Bugesera in the West, by the District of Kirehe in the East and by the Republic of Burundi in the South.

The District of Ngoma is part of lowlands of the East, a region essentially dominated by hills with low slopes, with an average altitude between 1400m and 1700 m above sea level. The original relief is a plateau strongly dissected by tectonical movements of the quaternary that were progressively gullied by the erosion creating valleys and swamps.

The climate is temperate especially in low altitudes. The annual average temperature is around 20C. Ngoma like other regions of the counrty enjoys four seasons of which two are rainy and other two are dry: a short rainy season which extends from October to December, a short dry season which runs from January to February, and a long rainy season from mid February to mid May and a long dry season from mid May to Early October. Generally the dry season begins earlier and ends later compared to other regions of the country. The resulting pluviometric deficit impacts adaversely agricultural and pastoral production.The volume of annual precipitations on the whole of the district lies between 900 and 1400 mm of rains.

As regard to soil and hydrography, Ngoma soil is favorable for agricultural activities due to the presence of little sandy –clay soil mixture.The District of Ngoma has three lakes namly Bilira, Mugesera and Sake which provides the region with a beautiful landscape that may attract tourists if developed and advocated for.

In terms of flora and fauna, the natural vegetation of the district of Ngoma is dominated by savanna landscapes. It is a typical vegetation of the east African basin, with vast lands of grass with scattered shrubs of the natural vegetation dominated by savanna landscapes.The western part of the district is made up of vast wetlands constituted by depressions of fluvio-lakes of the

Akagera that offers a typical landscape of lakes and swamps. As the District Natural ecosystems have disappeared, leaving room for crops and artificial forests which mainly consist of large banana plantations with the combination of avocado, mangoes, sweet potatoes, cassava, etc. The majority of the current afforested area consists of Eucalyptus and Pinus. Wildlife no longer exists in the region for a long time except for some birds, small mammals and reptiles encountered in the less frequented places.

(2) Demography

The total population of Ngoma District is 338,562 inhabitants among which 162,388 are males and 176,174 are females (NISR, 2012). The table below presents the population distribution by sector.

Table 1. Distribution of population by sector

Sector	2002 total population	2012 population			Sex ratio	Population change 2002-2012	Annual growth 2002-2012	Population density/Sq.km
		Male	Female	Total				
GASHANDA	11,064	7,706	8,616	16,322	89	47.5	4	426
JARAMA	18,434	11,339	12,534	23,873	90	29.5	2.6	262
KAREMBO	10,749	7,197	7,961	15,158	90	41	3.5	411
KAZO	18,318	13,244	14,232	27,476	93	50	4.1	392
KIBUNGO	23,286	14,948	13,740	28,688	109	23.2	2.1	662
MUGESERA	19,135	12,062	13,618	25,680	89	34.2	3	351
MURAMA	16,775	10,618	11,788	22,406	90	33.6	2.9	438
MUTENDERI	14,415	10,002	11,025	21,027	91	45.9	3.8	280
REMERA	17,167	13,346	14,336	27,682	93	61.3	4.9	549
RUKIRA	18,127	12,129	13,318	25,447	91	40.4	3.5	371
RUKUMBERI	16,971	13,602	14,977	28,579	91	68.4	5.3	332
RURENGE	17,363	13,481	15,041	28,522	90	64.3	5.1	438
SAKE	16,533	11,229	12,566	23,795	89	43.9	3.7	417
ZAZA	16,772	11,485	12,422	23,907	92	42.5	3.6	388
NGOMA	**235,109**	**162,388**	**176,174**	**338,562**	**92**	**44**	**3.7**	**393**

Source, **NISR, 2012 Population and Housing Census: provisional results**

From this table, the administrative sectors of Kibungo and Remera are the most populated: 662 and 549 inhabitants per Sq.km respectively while sectors of Mutenderi and Jarama are less populated: 280 and 262 inhabitants per Sq.km respectively.While the national average annual population growth rate is 2.6%, during the intercensal period (2002-2012), it is higher in the Eastern Province (4.3%) and Ngoma District (3.7%). The population density is 393 persons per sq.km against 416 at national level. The sex composition of the Ngoma District population, as measured by the

sex ratio, indicates that, there are 92 men per 100 women in 2012 which is the same at national level.

2. Ngoma District Irrigation Plan

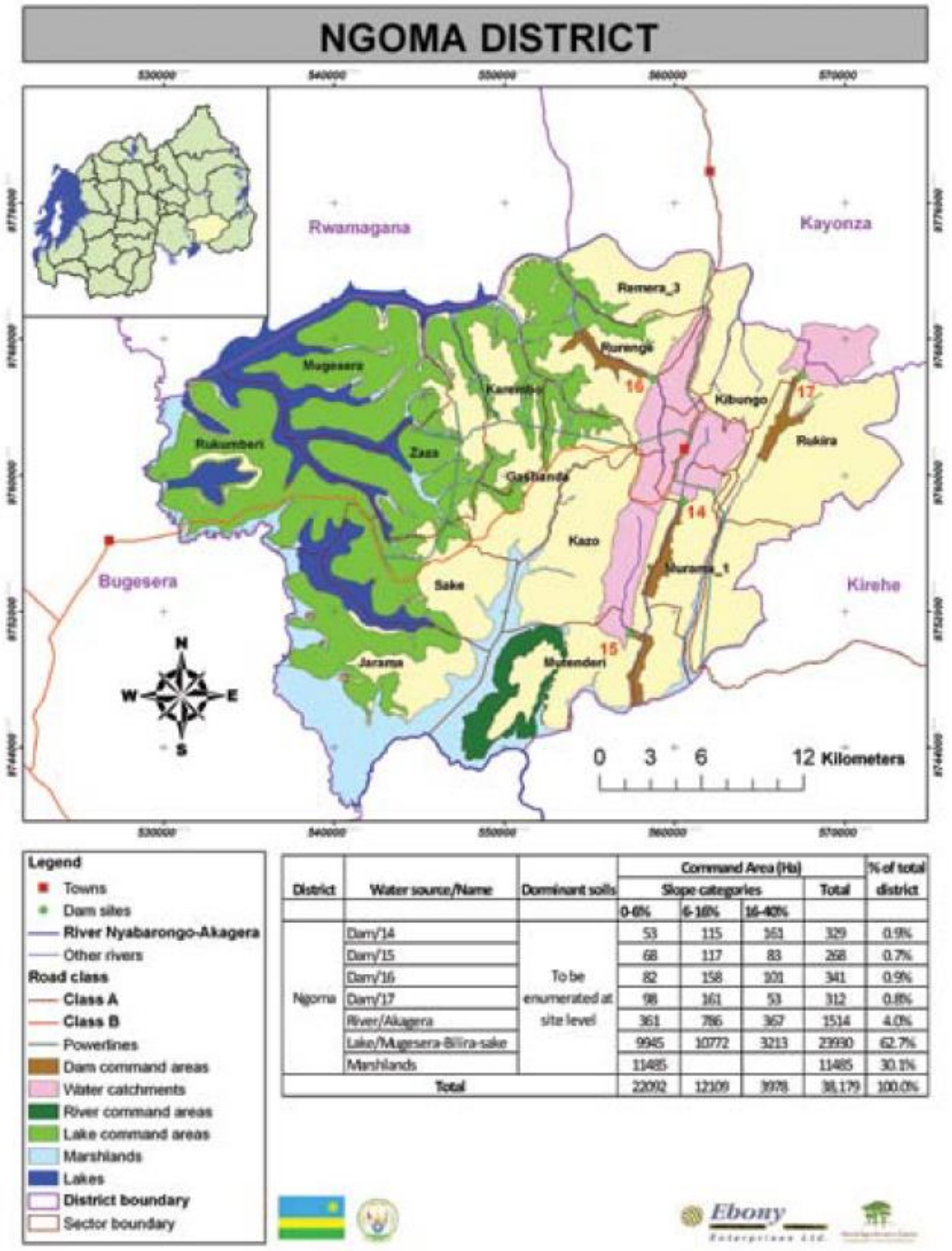
Ngoma district falls into ACZs 10 and 11. It is mainly lowlands and middle altitudes with slopes predominantly ranging from 6% to 25%. The geomorphology of Ngoma is made up of round hills with pockets of old peneplain and angular hills. The soils are varied but predominantly clayey and loamy. Rainfall in this district ranges from 900mm to 1100mm. Temperatures are moderate, 18–21° C. Possibilities in land suitability vary widely from upland crops, which require careful management, to upland crops, which require very careful management, and valley crops. Irrigation of rice along marshlands of Ngoma district is ongoing.

The IMP study indicates that a total of 38 179 ha have good potential for conventional irrigation in Ngoma district, covering dam, river, lake and marshland domains. Of these, the lake domain occupies 23 930 ha (62.7%), marshland 11 485 ha (30.1%) and the remainder shared between dams and river PIAs. These sites would need approximately 315.1 Mm3 of water (179.5 Mm3 from lakes, 114.9 Mm3 from marshlands and 20.1 Mm3 from the other domains). Access to road and electrical power grid to these sites is good.

Table 2: The Potential Irrigable areas in Ngoma

	Area(ha)	Ratio(%)
Dam	1,250	3.3%
Lake	23,930	62.7%
River	1,514	4.0%
Ground Water	-	0%
Marshland	11,485	30.1%
Total	38,179	100%

The total area of Marshlands in Ngoma is **1,107 ha** which is **9.6%** of the Potential area of marshland.



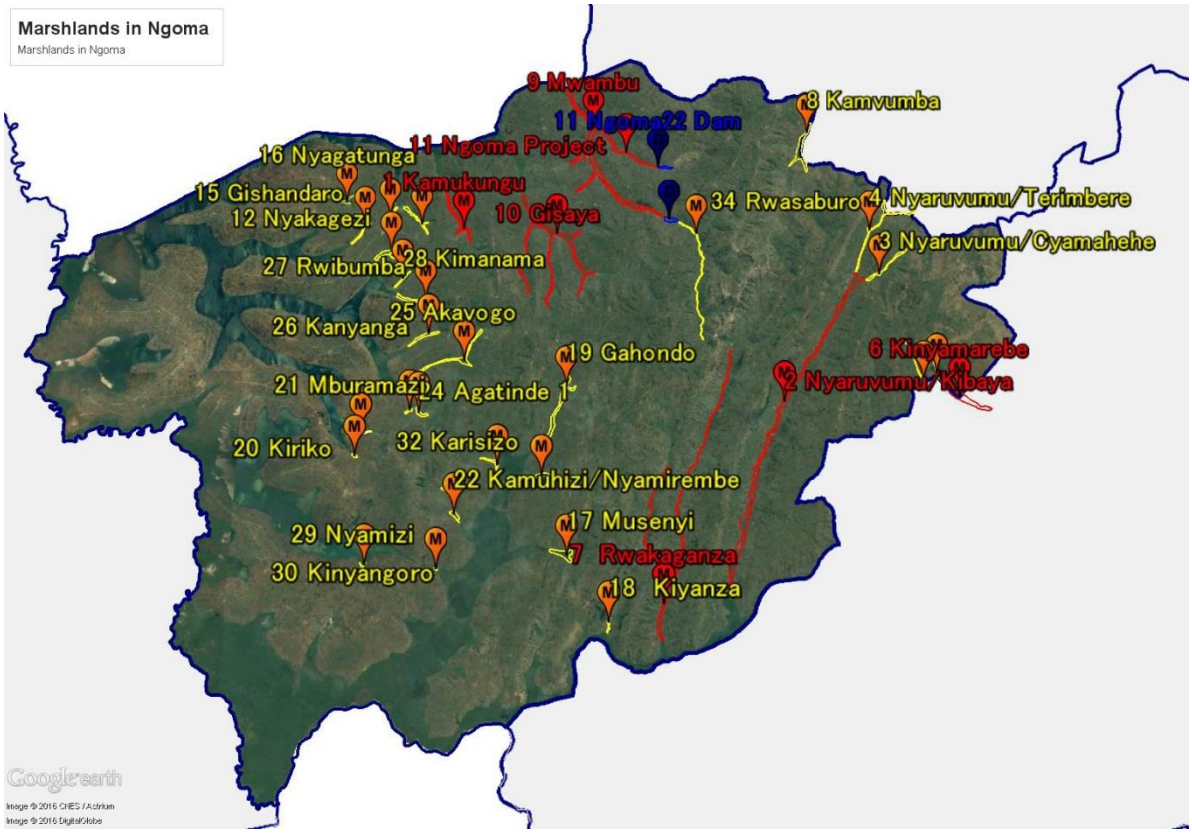
District	Water source/Name	Dominant soils	Command Area (Ha)				% of total district
			Slope categories			Total	
			0-6%	6-16%	16-40%		
Ngoma	Dam/14	To be enumerated at site level	53	115	161	329	0.9%
	Dam/15		68	117	83	268	0.7%
	Dam/16		82	158	101	341	0.9%
	Dam/17		98	161	53	312	0.8%
	River/Akagera		361	786	367	1514	4.0%
	Lake/Mugesera-Bilira-sake		9945	10772	3213	23930	62.7%
	Marshlands		11485			11485	30.1%
Total			22092	12109	3978	38,179	100.0%

(Figure 1 :The Potential Irrigable areas in Ngoma)

3. The Outline of the Marshlands in the Ngoma District

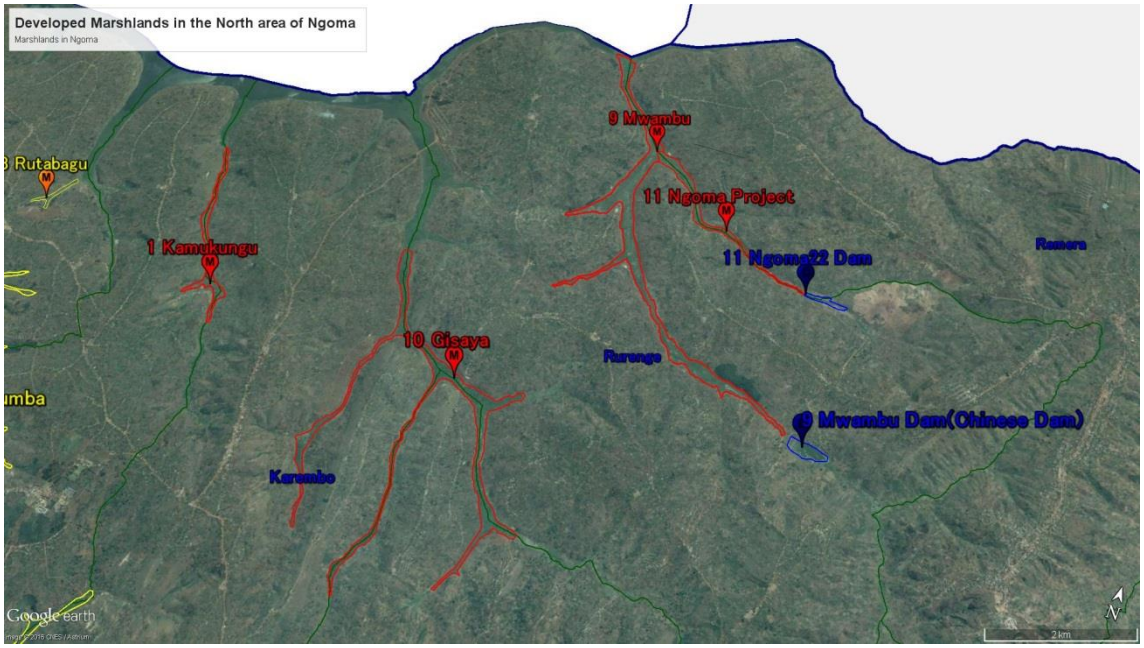
(1) The Outline of the Marshlands in the Ngoma District.

Ngoma District has Thirty Three (33) Marshlands,1,107ha. There are Seven (7) Developed Marshland, 692ha, and Twenty six(26) Non-Developed Marshlands,415ha.



(Figure2　Marshlands in Ngoma)

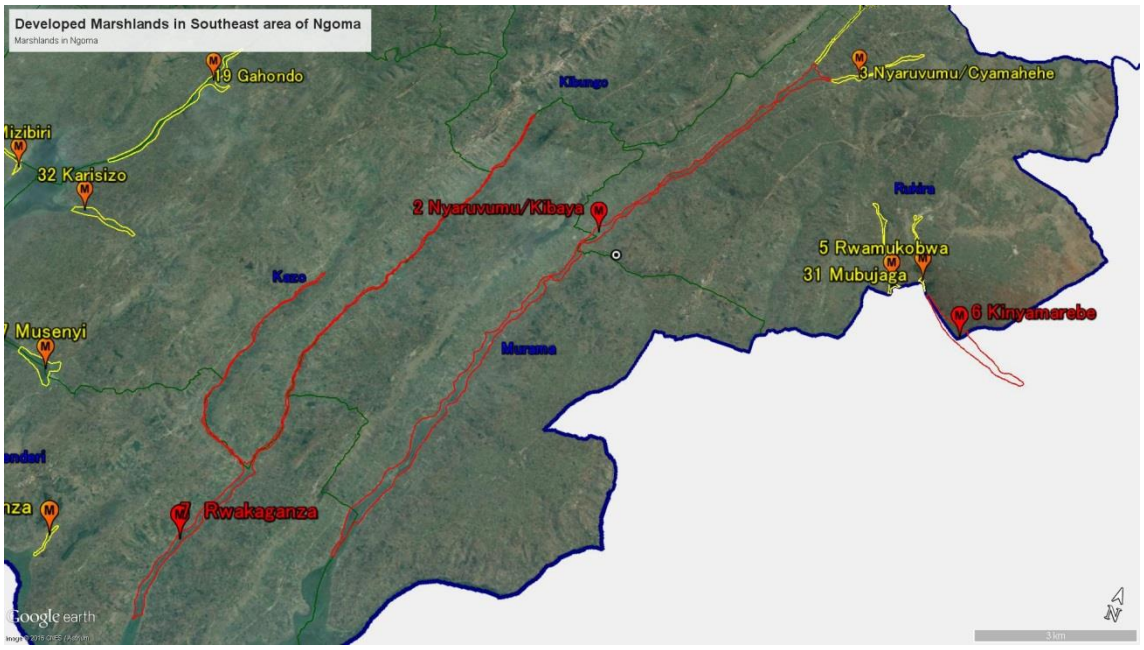
In the North area of Ngoma, there are Four(4) Developed Marshlands, 1)Kamukungu, 9)Mwambu, 10)Gisaya, 11)Ngoma Project. You should note that 11)Ngoma Project(35ha) is a part of the Ngoma Irrigation Project of JICA, which is mainly targeting hillside irrigation.



(Figure3　Developed Marshlands in the North area of Ngoma)

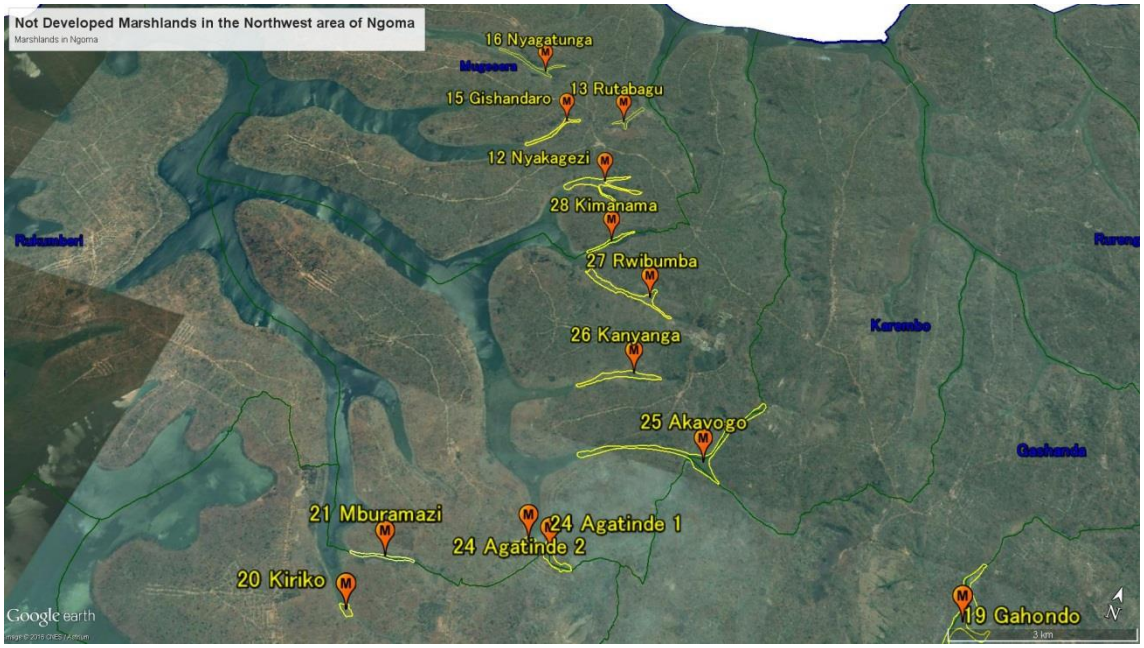
In the Southeast area of Ngoma District, there are Three (3) Developed Marshlands, which are 2)Nyaruvumu/Kibaya,)Kinyamarebe,7)Rwakaganza.

2)Nyaruvumu/Kibaya was developed by RSSP in 2006, and 6)Kinyamanrebe was developed by farmers with support from KWAMP. 7)Rwakaganza is under development by QWMD.



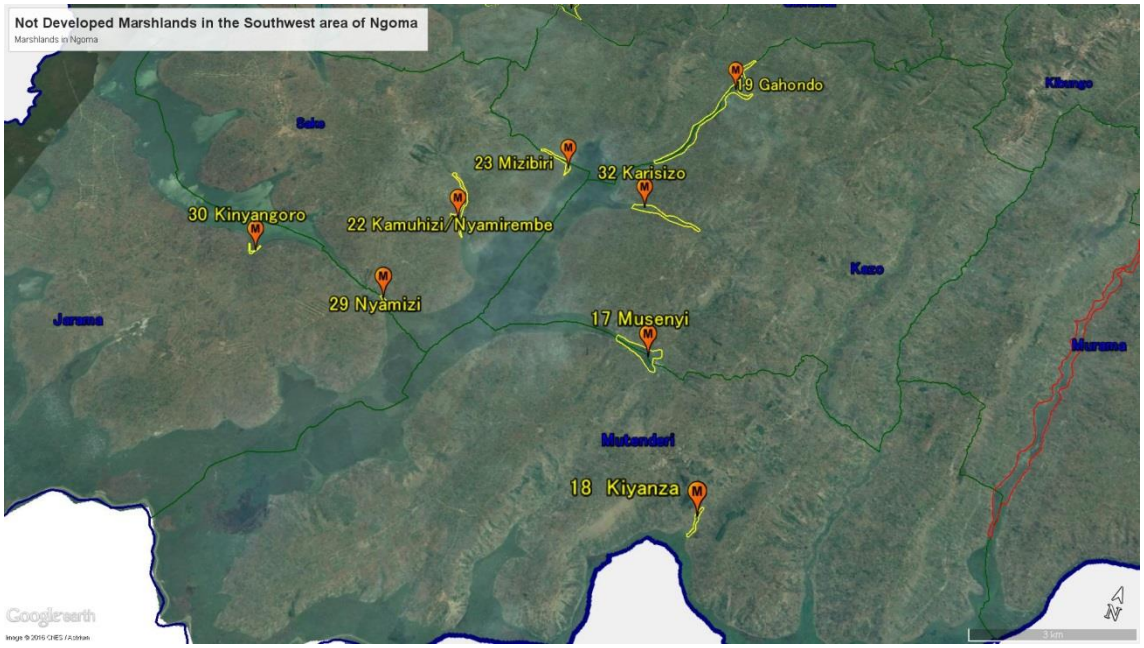
(Figure 4 Southeast area of Ngoma)

In the Northwest area of Ngoma District, there are Eleven(11) Non-Developed Marshlands, which are 12)Nyakagezi, 13)Rutabagu, 15)Gishandaro, 16)Nyagatunga, 20)Kiriko, 21)Mburamazi, 24)Agatinde, 25)Akavogo, 26)Kanyanga, 27)Rwibumba, 28)Kimanama.



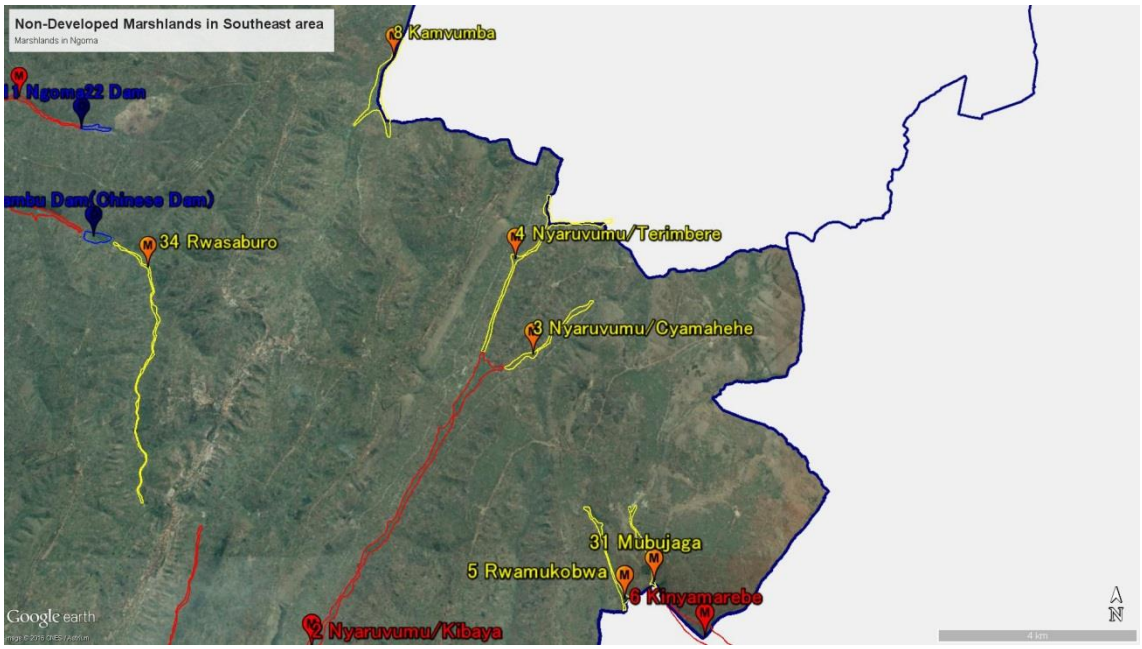
(Figure 5 Non-Developed Marshlands in Northwest area of Ngoma)

In the Southwest area of Ngoma District, there are Eight(8) Non-Developed Marshlands, which are 17)Musenyi,18)Kiyanza, 19)Gahondo, 22)Kamuhizi/Nyamirembe, 23)Mizibiri, 29)Nyamizi,30)Kinyangogo, 32)Karisizo.



(Figure 6 :Non-Developed Marshlands in Southwest area of Ngoma)

In the northwest area of Ngoma District, there are Six (6) Non-Developed Marshlands, which are 3)Nyaruvumu/Cyamahehe, 4)Nyaruvumu/Terimbere, 5)Rwamukobwa, 8)Kamvumba, 31)Mubujaga, 33)Rwasaburo.



(Figure 7: Non-Developed Marshlands in Southeast area of Ngoma)

(2) Comments for Marshlands in the Ngoma District

We can make a classification of the Marshlands in Ngoma for the Three (3) types below.

a) The Developed Marshland in the North area of the Ngoma District

1)Kamukungu, 9)Mwambu, 10)Gisaya, 11)Ngoma Project.

These Four (4) Marshlands were developed by QWMD in 2015, by Chinese in 1985, by RSSP in 2011, by JICA(QWMD) in 2016 respectively. The facilities of the 9)Mwambu Marshland is old and need to be rehabilitated, and the canals of 1)Kamukungu have some problems about leveling, so they should consider about reconstruction of them. The facilities' situation of 10)Gisaya is not good cause of the bad maintenance, so IWUO should be trained and maintain them properly.

b) The Developed Marshlands in the Southeast area of the Ngoma District.

2)Nyaruvumu/Kibaya, 6)Kinyamarebe,7)Rwakaganza.

These Three (3) Marshlands were developed by RSSP in 2006, by farmers with support from KWAMP, by QWMD in 2016 respectively. There is a problem of the water distribution between developed and undeveloped areas in 2)Nyaruvumu/Kibaya, so they should check the situation of facilities. Regarding 6)Kinyamarebe, they should cooperate with KWAMP project. In the 7)Rwakaganza, there are a problem of the Weir that don't convey water properly, so they should check and repair it.

c)Non-Developed Marshlands in the Ngoma District.

3)Nyaruvumu/Cyamahehe,4)Nyaruvumu/Terimbere,5)Rwamukobwa,8)Kamvumba, 12)Nyakagezi, 13)Rutabagu, 14)Nyamabuye, 15)Gishandaro, 16)Nyagatunga,17)Musenyi, 18)Kiyanza, 19)Gahondo, 20)Kiriko, 21)Mburamazi,22)Kamuhizi/Nyarirembe, 23)Mizibiri,24)Agatinde, 25)Akavogo,26)Kamyanga,27)Rwibumba,Gashununu, 28)Kimanama,29)Nyamizi,30)Kinyangoro,31)Mubujaga,32)Karisizo,33)Rwasaburo

There are Twenty Six (26) Non-Developed Marshlands in Ngoma. Except for Six (6)Marshlands(3),4),5)8),31),33)) in Southeast area of Ngoma, Twenty(20) Marshlands are in the basin of Akagera River.

They should consider about the decentralization of the irrigation system in Rwanda. Especially, the site of under 20ha size which are

Eighteen(18)marshlands (5),13),14),15),16),18),20),21),22),23),24),26),27),28),29),39),31),32) , should be developed by the local government or farmers. However, we should consider about training the local government officers and farmers about the irrigation technology for them to develop their Marshlands by themselves.

(3) The record of the field visit

The field visits of marshland survey were conducted on the schedule below. On the field, we conducted the interview to Sector Agronomists or farmers about the situation of the Marshlands, and picked up the contact persons' phone number of the Cooperatives or IWUOs in those fields. After coming back to Kigali, we conducted the interview for those persons.

Date	Marshlands	Notes
10th March,2016	11)Ngoma Project	
19th April,2016	1)Kamukungu	
26th April,2016	2)Nyaruvumu/Kibaya,3)Nyaruvumu/Cyamahehe, 4)Nyaruvumu/Terimbere,5)Rwamukovwa, 6)Kinyamarebe,7)Rwakaganza,31)Mubujaga	
27th April,2016	8)Kamvumba,9)Mwambu,10)Gisaya	
4th May,2016	12)Nyakagezi,13)Rutabagu,14)Nyamabuye 15)Gishandaro,16)Nyagatunga,25)Akavogo	
5th May,2016	17)Musenyi,18)Kiyaza,7)Rwakaganza,33)Rwasoburo	
10th May,2016	19)Gahondo,20)Kiriko,21)Mburamazi 22)Kamuhizi,23)Mizibiri,24)Agatinde,32)Kirisizo	
11th May,2016	26)Kanyanga,27)Rwibumba,28)Kimanama, 29)Nyamizi,30)Kinyangoro	

4. The individual data of the Marshlands in Ngoma

(1) Kamukungu Marshland

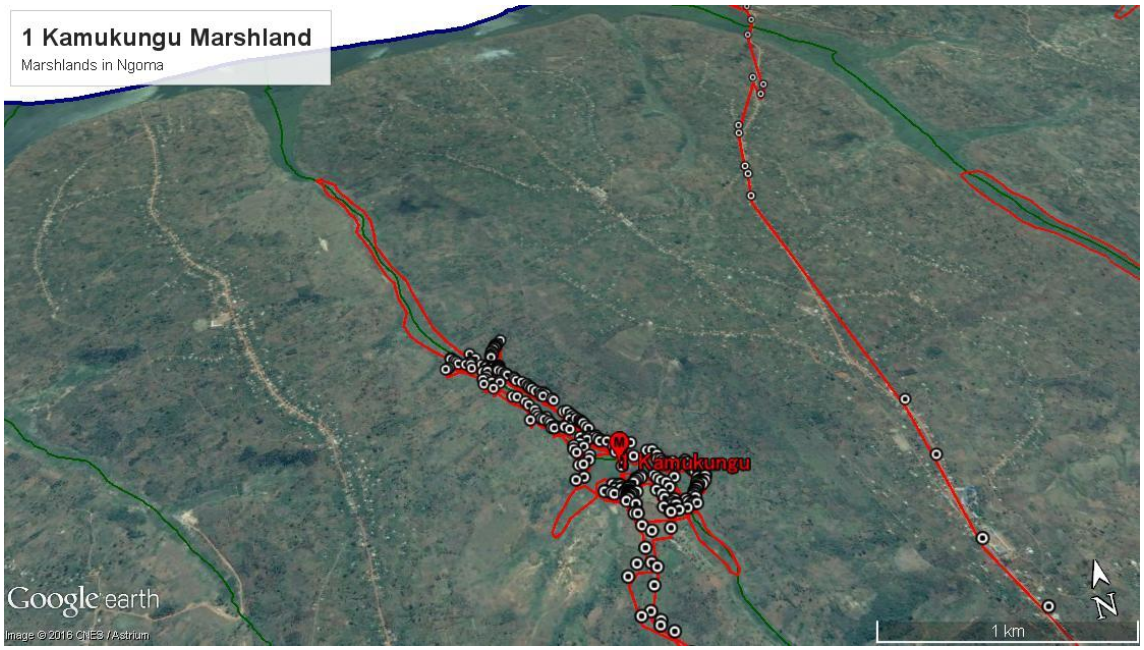
1)Sector:Zaza、Karembo

2)Size:32ha

3)Status＆Challenges: Developed by QWMDP in 2015. After the development, paddy plots are getting water. Downstream near the lake, 2ha are flooded during rainy season. The cooperative is planning to make the drying areas.

4)Main crop: Rice

5)Field Visit Date:19th April,2016



This Marshland was developed by QWMDP Project in 2015.

RAB Team together with local authorities accessed the situation of the Marshland for reception after construction.

They said that the lack of water occurred by the unbalanced leveling during the construction.

They are considering about reconstruction of the canals.

(2) Nyaruvumu/Kibaya Marshland

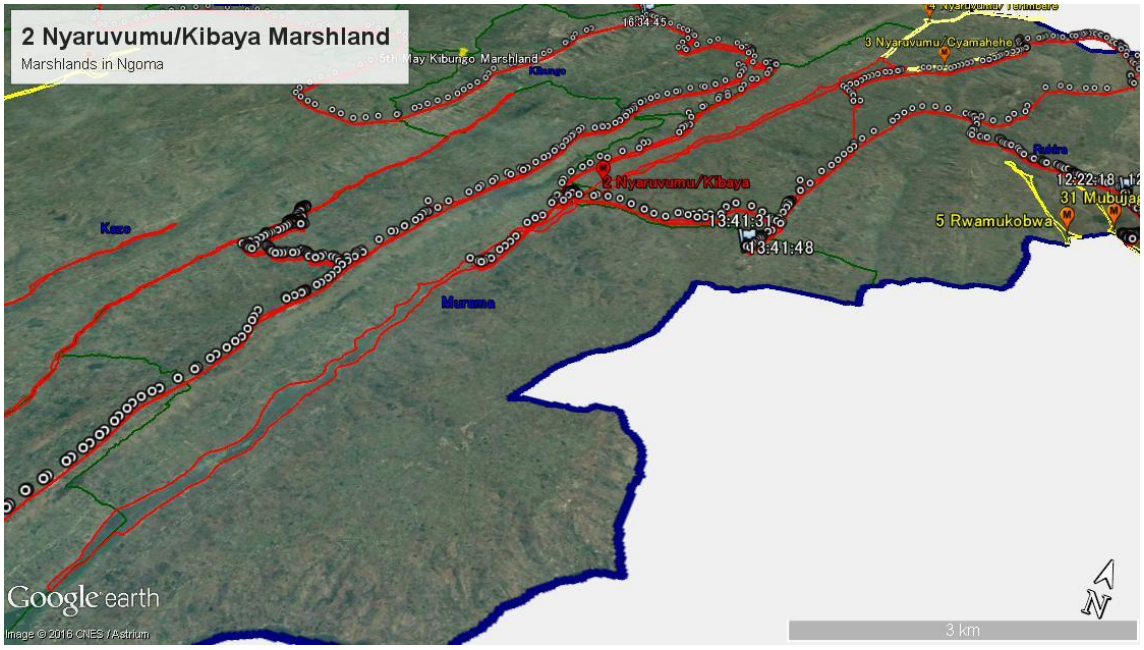
1)Sector: Rukira,Murama

2)Size: 233ha

3)Status＆Challenges: Developed by RSSP in 2006. Undeveloped part is causing problem during dry season. There is no coordination for the water use developed and undeveloped areas. In some areas there is a problem of floods especially in the downstream areas. Due to floods, during rainy season the command area reduces

4)Main crop: Rice

5)Field visit date:26th April,2016



You can see the confluence of the two valleys between the Cyamahehe Marshland and the Terimbere Marshland, which is the beginning of the Kibaya valley.

They cultivate rice in this Marshland. This Marshland was developed by RSSP in 2006.

There is enough water, but sometimes flooded in the downstream areas of this marshland.

You can see the Weir. There is no Dam.

(3) Nyaruvumu/Chamahehe Marshland

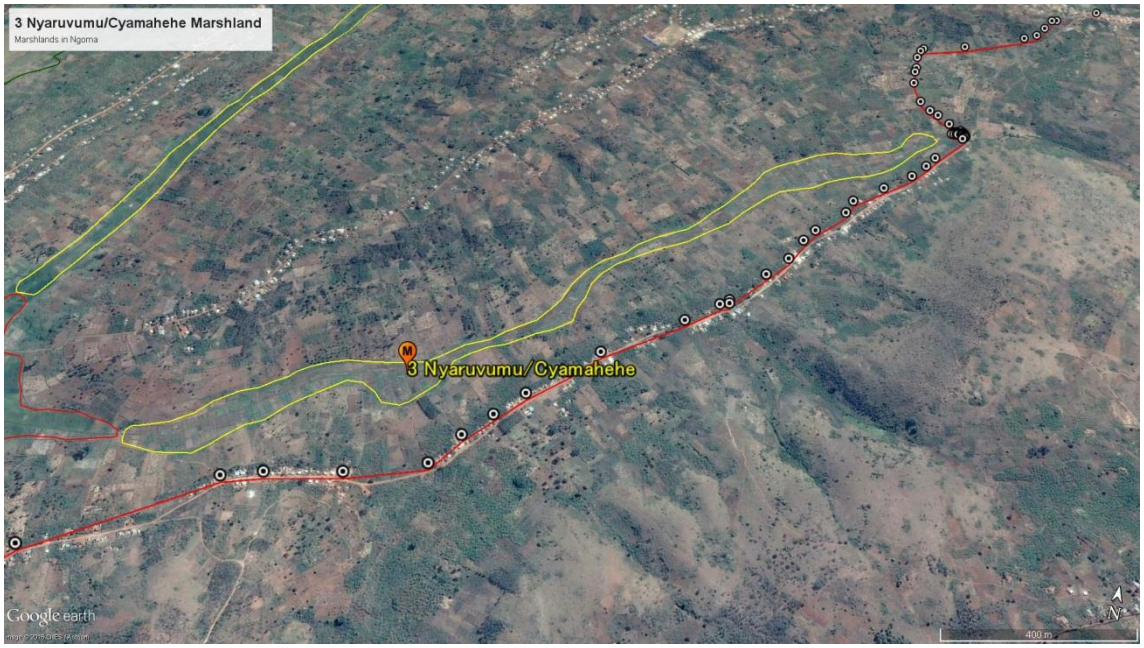
1)Sector:Rukira

2)Size: 23ha

3)Status＆Challenges: Not developed

4)Main crop: Vegetables, Maize, Sorghum

5)Field visit date:26th April,2016



This marshland is not developed, but there is enough water.

They are cultivating Maize, Vegetables, Beans etc.

The Agronomist said that the problem is the water distribution.

(4) Nyaruvumu/Terimbere Marshland

1)Sector: Rukira

2)Size: 34ha

3)Status＆Challenges: Not developed

4)Main crop: Rice

5)Field visit date:26th April,2016

This Marshland is located in the upstream area of the Nyaruvumu/Kibaya Marshland.

(5) Rwamukobwa Marshland

1)Sector: Rukira

2)Size: 10ha

3)Status＆Challenges: Not developed. Water is not enough during rainy season.

4)Main crop: Vegetables,Maize,Sorghum

5)Field visit date:26th April,2016

We didn't get to the Rwamukobwa Marshland. I took a picture of this Marshland.

(6) Kinyamarebe Marshland

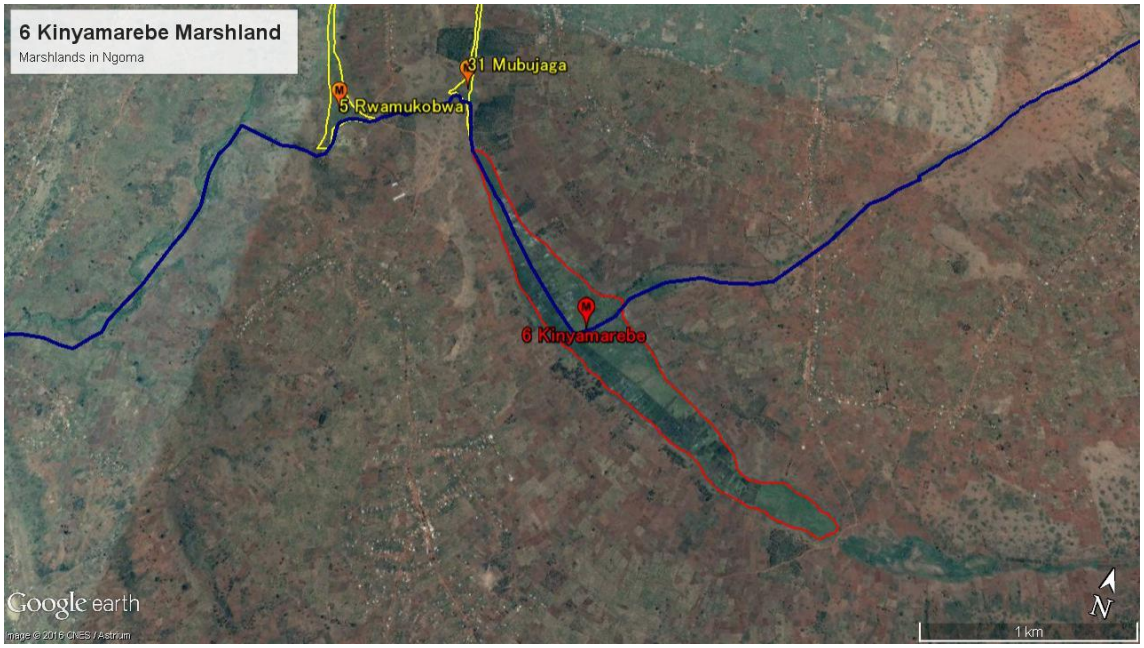
1)Sector:Rukira(Ngoma),Mushikiri(Kirehe)

2)Size: 50ha

3)Status&Challenges: Water is enough. They constructed the irrigation canals supported by KWAMP Project.

4)Main crop: Rice

5)Field visit date:26th April,2016



They cultivate rice.

The farmers made small canals supported by KWAMP Project.

The maintenance of the canal is not good.

The Sector Agronomist and the village leader showed around this marshland.

(7) Rwakaganza Marshland

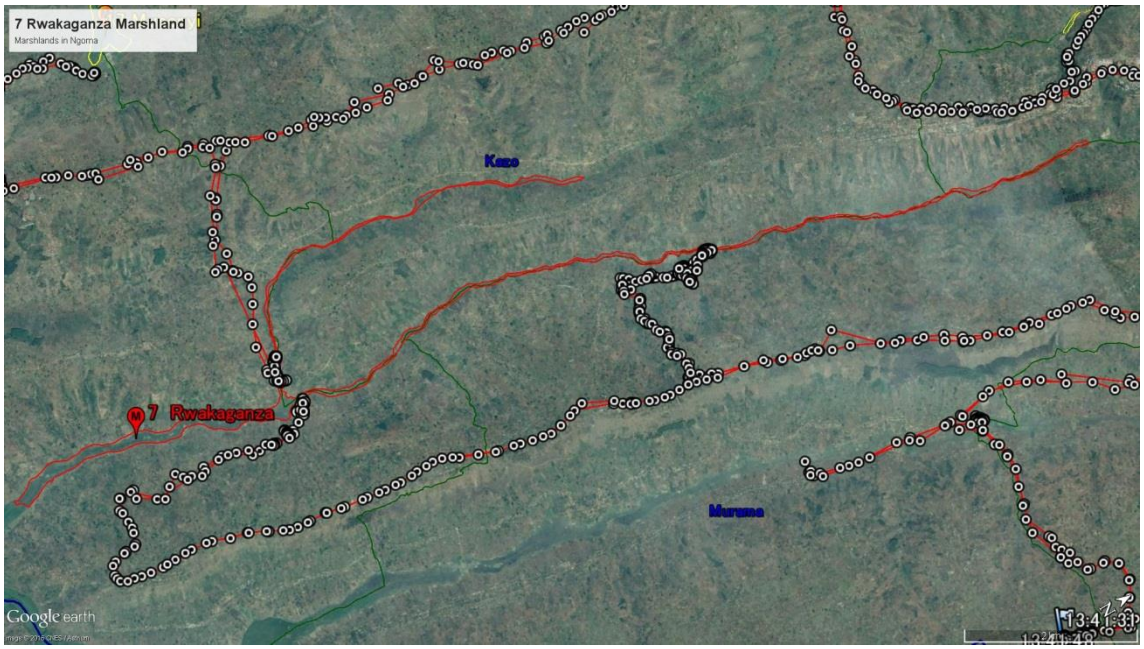
1)Sector:Murama、Kibungo、Mutenderi

2)Size: 150ha

3)Status＆Challenges: The Marshland is under development by QWMD(Quick Win Marshland Development), they have enough water but the problem is that the weir don't convey water equally on both side.

4)Main crop: Soy beans, Beans, Vegetables

5)Field visit date:26th April,5th May,2016



(26th April,2016)
They cultivate Soy beans.

The Marshland is under construction by QWMD Project.

The Sector Agronomist showed us around this Marshland.

(5th May,2016)

This Marshland was developed by QWMDP(Quick Win Marshland Development Program) in 2015.

They are cultivating rice.

This is the diversion weir developed by QWMDP in 2015.

The right canal is functioning; the water is flowing in the canal.

On the other hand, the left side of the canal is not functioning well. Due to the sedimentation and bad leveling, the water doesn't reach the downstream areas of the canal.

(The end)

(8) Kamvumba Marshland

1)Sector:Remera

2)Size:43ha

3)Status & Challenges :Not developed. They have problems about the irrigation network. The marshland is located at the upstream area of the Rwinkwavu Dam. They are getting water from springs

4)Main crop: Rice

5)Field visit Date:27th April,2016

We went to the Kamvumba Marshland on 27th April,2016 with Ms. Angelique who is the RAB staff and the president of the Cooperative. This marshland is located in the Remera Sector. It is a small Marshland and has not been developed, but the farmers are cultivating rice and vegetables.

The problem is the bad distribution of water due to the bad irrigation network.

There is enough water to cultivate rice.

They cultivate the Vegetables (Egg Plant) also.

This Marshland is located in the upstream area of the Rwinkwavu Dam in Kayonza District. So, the downstream area of this Marshland is flooded sometimes.

(9) Mwambu Marshland

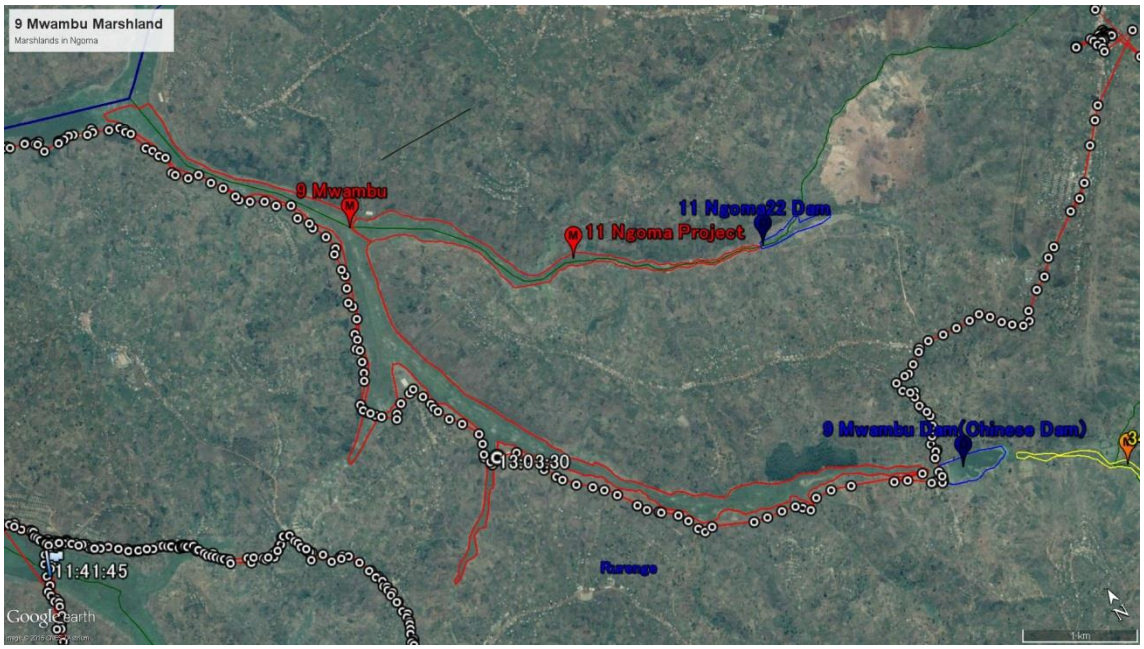
1)Sector:Rurenge

2)Size:100ha

3)Status＆Challenges :This Marshland was developed by Chinese in 1970s-1980s. However there are many problems in facilities, so the rehabilitation is necessary.

4)Main crop: Rice

5)Field visit Date:27th April,2016



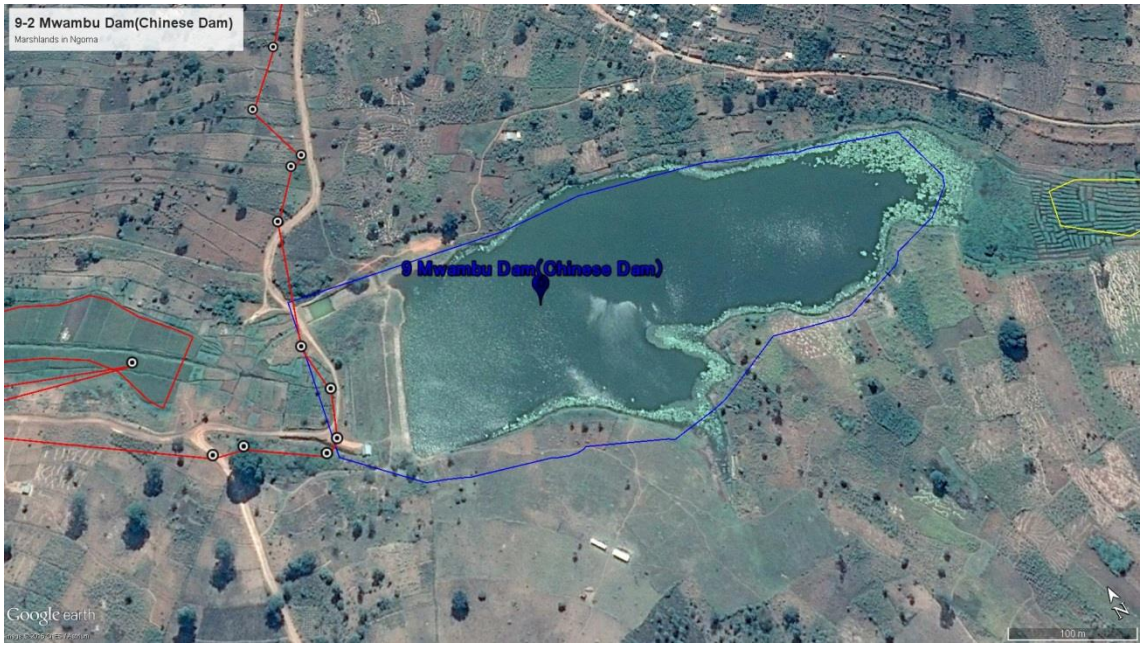
This Marshland is located next to the Ngoma project, and we have visited this marshland many times. It was developed by Chinese in 1970s-1980s, so it is necessary to rehabilitate a Dam and canals. They are mainly cultivating rice.

You can see the construction line on the middle of the hill, which is the canal of the Ngoma irrigation project granted by JICA.

Here is the confluence between Ngoma project valley and Chinese dam valley.

You can see the construction line of the canal and the No.2 regulation tank site of the Ngoma Irrigation Project.

(9-2) Mwambu Dam(Chinese Dam)



We usually call this dam “Chinese Dam”.

This dam was constructed by Chinese in 1970s-1980s. It is working today.

This is the house of the intake.

This is the spillway of this Dam.

(10) Gisaya Marshland

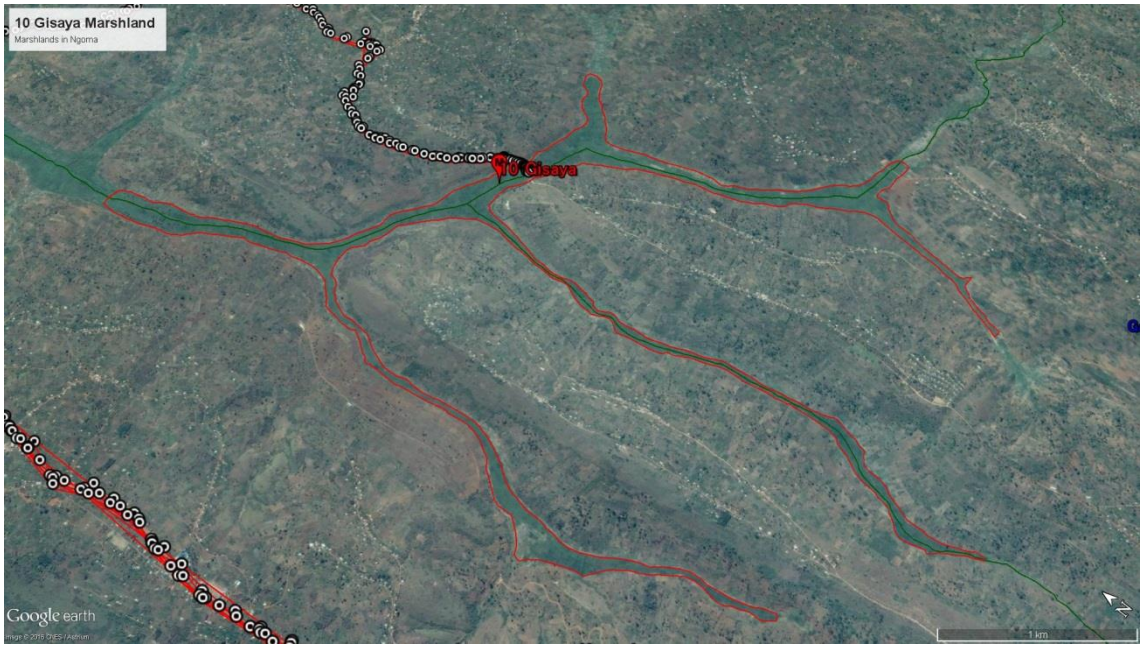
1)Sector:Karembo,Gashanda,Rurenge

2)Size: 92ha

3)Status＆Challenges: This Marshland was developed by RSSP in 2011.

4)Main crop: Rice

5)Field visit Date:27th April,2016



This Marshland is the basin of the Mugesera Lake.

Ms. Angelique, RAB staff, accompanied our team in the field visit.

They cultivate rice.

The maintenance of the drainage is not good. The IWUO of this Marshland have to clean up the weed in the drainage.

(11) Ngoma Project Marshland

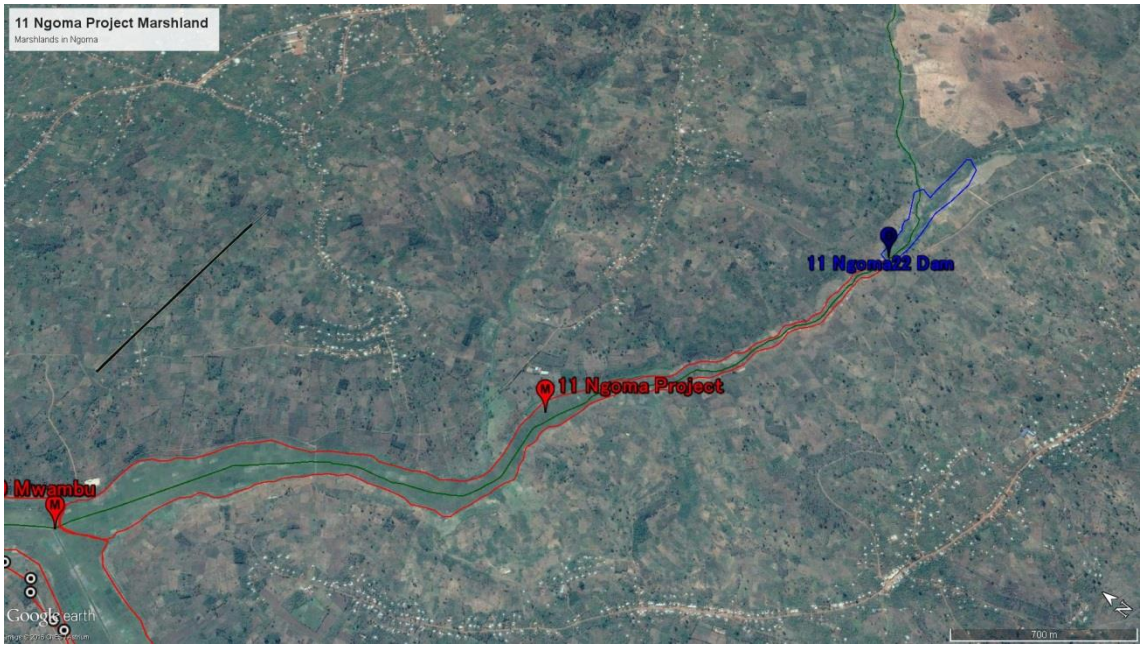
1)Sector: Remera,Rurenge

2)Size: 35ha

3)Status&Challenges: This Marshland is under development by JICA & QWMD.

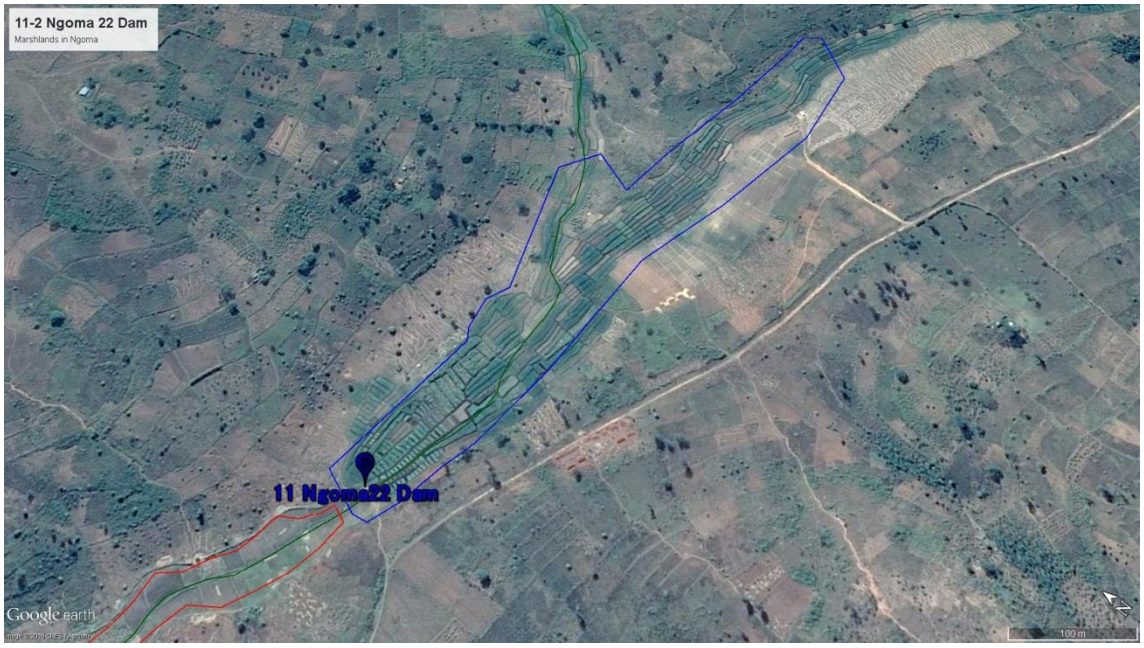
4)Main crop: Rice

5)Field visit date:10th March,2016



They cultivate rice.

(11-2) Ngoma22 Dam



The Japanese contractor, Konoike, is constructing a Dam.

(12) Nyakagezi Marshland

1)Sector: Mugesera

2)Size: 20ha

3)Status&Challenges: There is a conflict with people taking sand who are from the construction companies. And, one part of this Marshland doesn't get water due to the ack of canal. Additionally there is a conflict between the Marshland farmers and the Hillside farmers. They need a buffer zone to protect the Marshland.

4)Main crop: Rice

5)Field visit date:4th May,2016

They are cultivating rice.

This Marshland has not been developed.

They are annoyed by sandy soil. It is not suitable for rice.

(13) Rutabagu Marshland

1)Sector :Mugesera

2)Size: 6ha

3)Status＆Challenges: Drainage from hillside.

4)Main crop: Rice

5)Field visit date:4th May,2016

You can see the Rubatagu Marshland which is located at the upstream area of the Mugesera Lake.

(14) Nyamabye Marshland

1)Sector :Mugesera

2)Size: 15ha

3)Status＆Challenges: Not developed. Problem is the water distribution.

4)Main crop :Rice

5)Field visit date:4th May,2016

Here is a domestic water station.

This marshland is not developed.

The problem is the water distribution.

(15) Gishandaro Marshland

1)Sector :Mugesera

2)Size:9ha

3)Status&Challenges: There is a conflict between Marshland farmers and hillside farmers.

4)Main crop :Rice

5)Field visit date:4th May,2016

You can see the fish pond.

This Marshland is connecting to the Mugesera Lake.

(16) Nyagatunga Marshland

1)Sector :Mugesera

2)Size:12ha

3)Status＆Challenges: This Marshland has not been developed.

4)Main crop :Rice

5)Field visit date:4th May,2016

They are cultivating rice, but is suffering from the lack of water in the dry season.

This Marshland has not been developed and sometimes it is very difficult to distribute water.

Thanks to the president of the Cooperative, we could get good information about the Marshland.

(17) Musenyi Marshland

1)Sector :Mutenderi, Kazo

2)Size: 27ha

3)Status & Challenges: They have enough water but no canal. The downstream area of the Marshland is flooded during rainy season.

4)Main crop :Rice

5)Field visit date:5th May,2016

This Marshland is connecting to the Akagera Swamp.

They are cultivating rice, not developed. The problem is the water distribution.

The JICA made the domestic water station.

This is the resource of the domestic water station.

(18) Kiyanza Marshland

1)Sector:Mutenderi

2)Size: 4ha

3)Status & Challenges: Not enough water and the command area doesn't have a flat topography. It is like a valley.

4)Main crop :beans, Vegetables, Soy beans

5)Field visit date:4th May,2016

This Marshland is connecting to the Akagera Swamp. You can see the Papyrus reaching to this Marshland.

They are cultivating beans.

This Marshland has not been developed, so they have the problem of water distribution.

(19) Gahondo Marshland

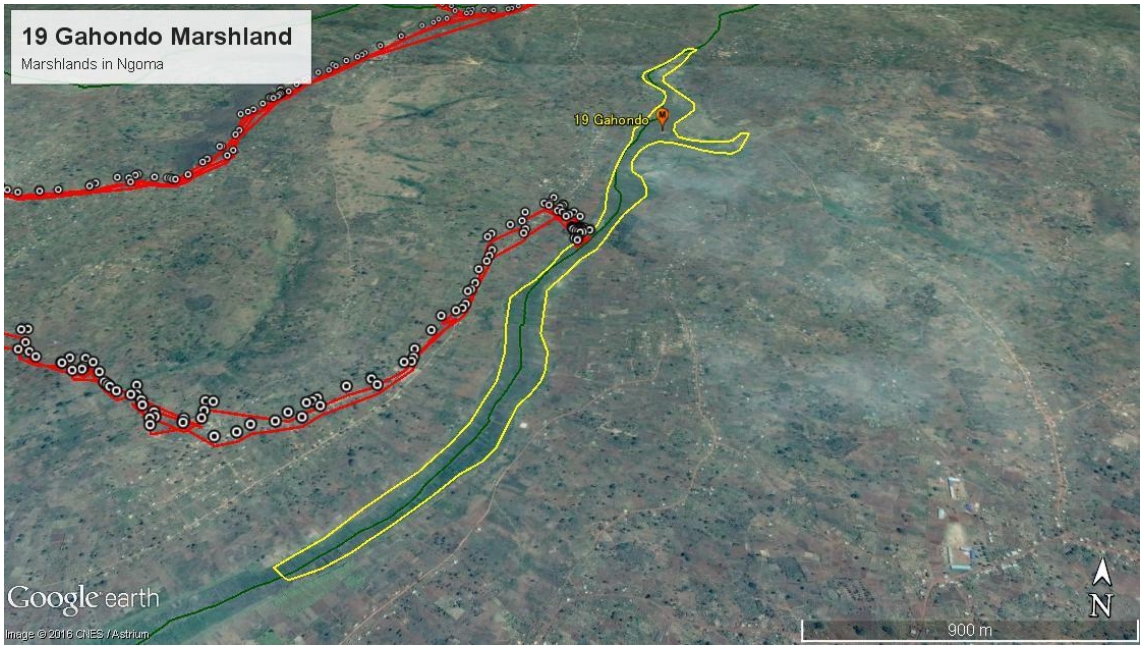
1)Sector :Kazo,Gashanda

2)Size: 52ha

3)Status＆Challenges: They have enough water, no canal. In 2010, they have got training from Picropp(The technical cooperation project from JICA) on leveling.

4)Main crop :Rice

5)Field visit date:10th May,2016



This Marshland is connecting to the Aakagera　Swamp.

They are growing rice.

This Marshland has not been developed.

They have enough water, but flooded somewhere downstream near Swamp.

The farmer said that the problem is farmer's organization, fertilizer, seeds etc.

(20) Kiriko Marshland

1)Sector :Sake

2)Size: 3ha

3)Status＆Challenges: Flood in the downstream areas

4)Main crop :Rice

5)Field visit date:10th May,2016

This Marshland is connecting to Mugesera Lake.

This Marshland has not been developed and the problem is that there is some flood in the downstream area.

The technic of cultivating is not good, so various seeds are mixing and there are many weeds.

(21) Mburamazi Marshland

1)Sector:Sake, Zaza

2)Size: 5ha

3)Status＆Challenges :This Marshland is connecting to the Mugesera Lake like 20)Kriko Marshland.

4)Main crop :Rice

5)Field visit date:10th May,2016

This Marshland is connecting to Mugesera Lake near 20)Kiriko Marshland.

(22) Kamuhizi/Nyamirembe Marshland

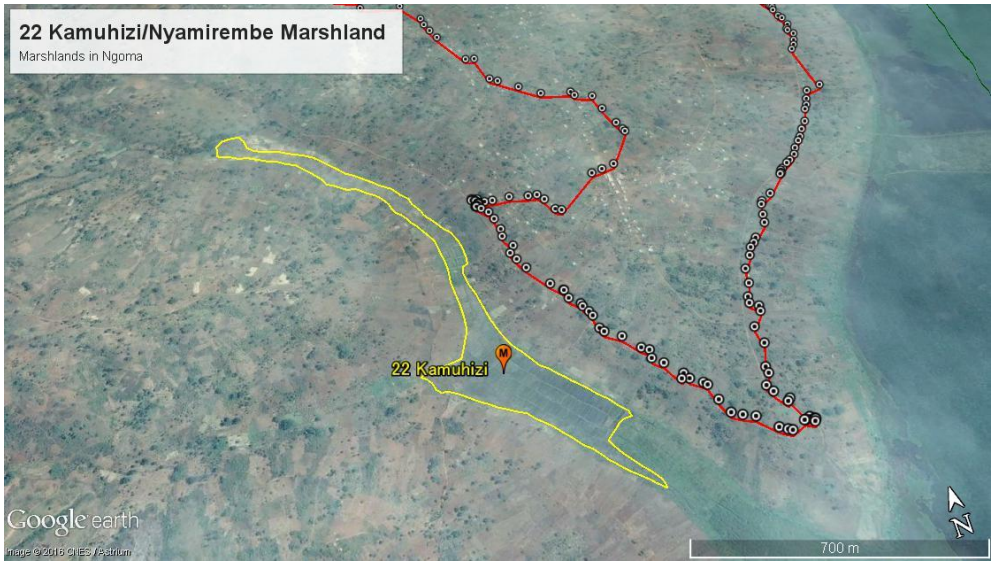
1)Sector: Sake

2)Size: 13ha

3)Status&Challenges: Nyamirembe Marshland is the upper part of this Marshland, which has a problem of the shortage of water during dry season. Kamuhizi Marshland located downstream has a problem of the flood from Akagera swamp during rainy season.

4)Main crop:

5)Field visit date:



This Marshland has not been developed.

The problem is the water distribution.

This Marshland is connecting to the Akagera Swamp.

(23) Mibirizi Marshland

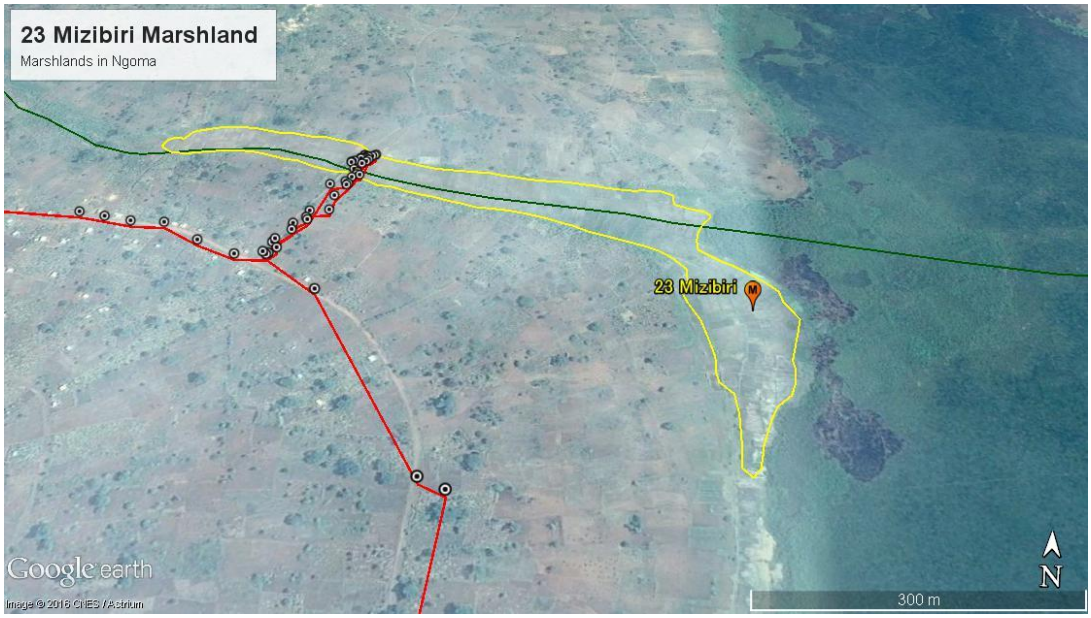
1)Sector: Sake

2)Size: 7ha

3)Status＆Challenges: Flood downstream, canals, conflict with hillside farmers.

4)Main crop :Rice

5)Field visit date:10th May,2016



This Marshland is connection to the Akagera Swamp.　You can see the Swamp with Papyrus.

They are growing rice. This Marshland has not been developed and the problem is the water distribution.

You can see the Akagera Swamp near the Mizibiri Marshland.

The brown surface of the Akagera Swamp is caused by these brown grasses.

(24) Agatinde Marshland

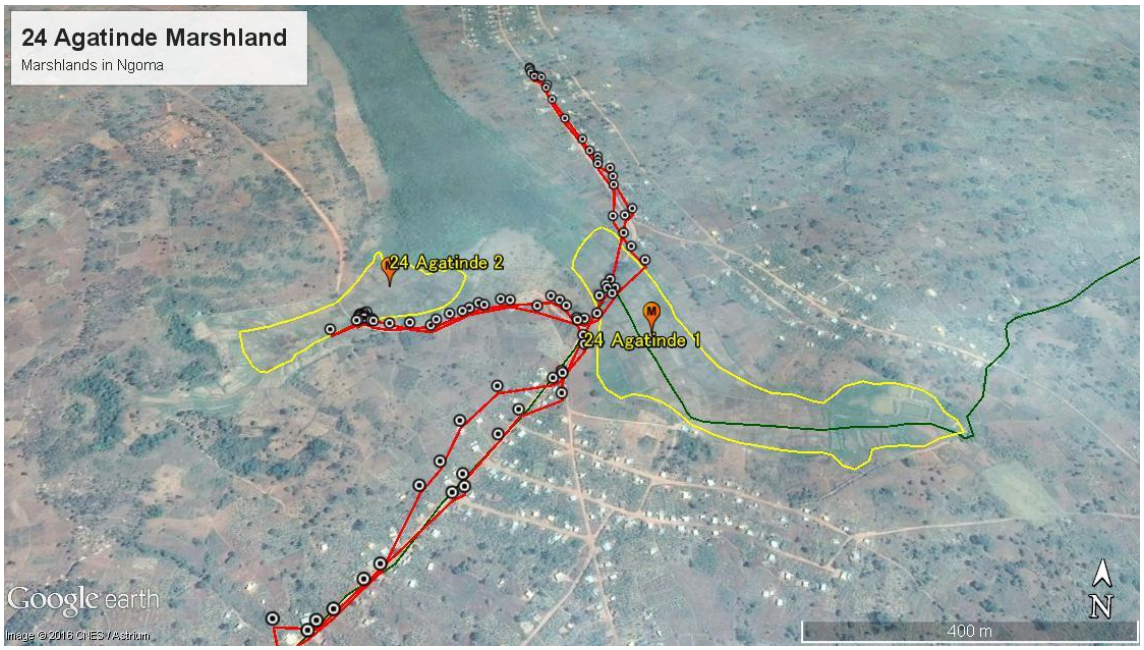
1)Sector :Zaza, Sake

2)Size: 11ha

3)Status＆Challenges: Flood downstream, and they need irrigation canals.

4)Main crop :Rice, Vegetables

5)Field visit date:10th May,2016



This marshland is connecting to the Mugesera Lake, and is divided into two Marshlands.

This Marshland has not been developed and the problem is the water distribution.

They grow rice and Vegetables.

(25) Akavogo Marshland

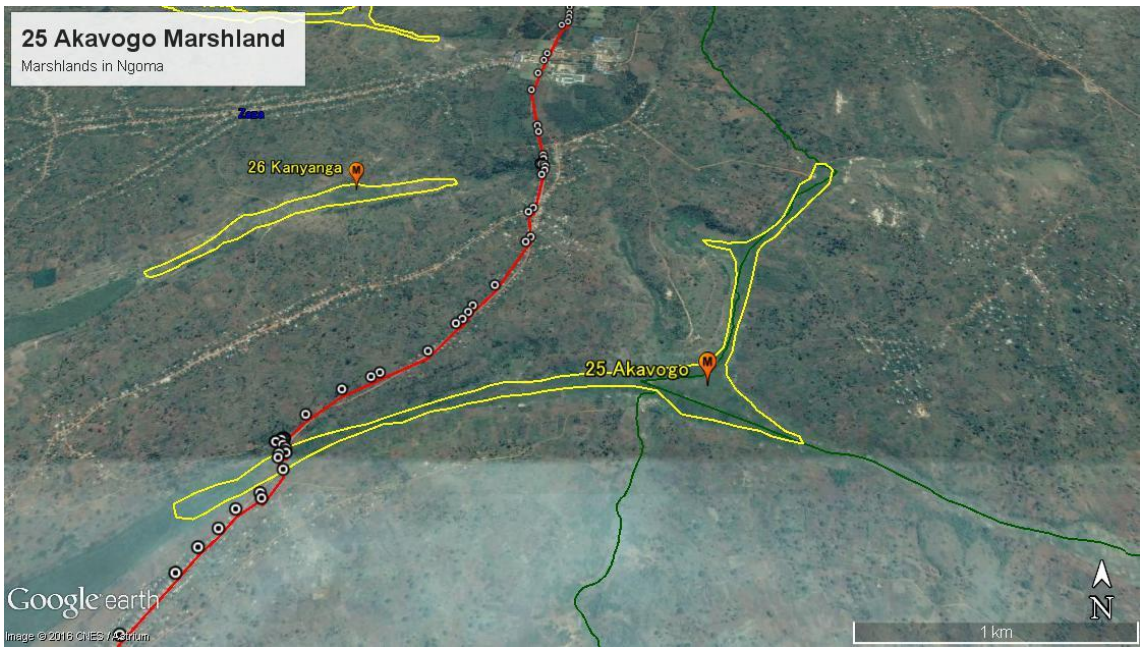
1)Sector :Zaza, Karembo, Gashanda

2)Size: 32ha

3)Status&Challenges: No irrigation canal, and downstream is flooded during rainy season.

4)Main crop :Rice

5)Field visit date:4th May,2016



They are growing rice.

This Marshland has not been developed, and there are not any canals.

This drainage was constructed by farmers.

(26) Kanyanga　Marshland

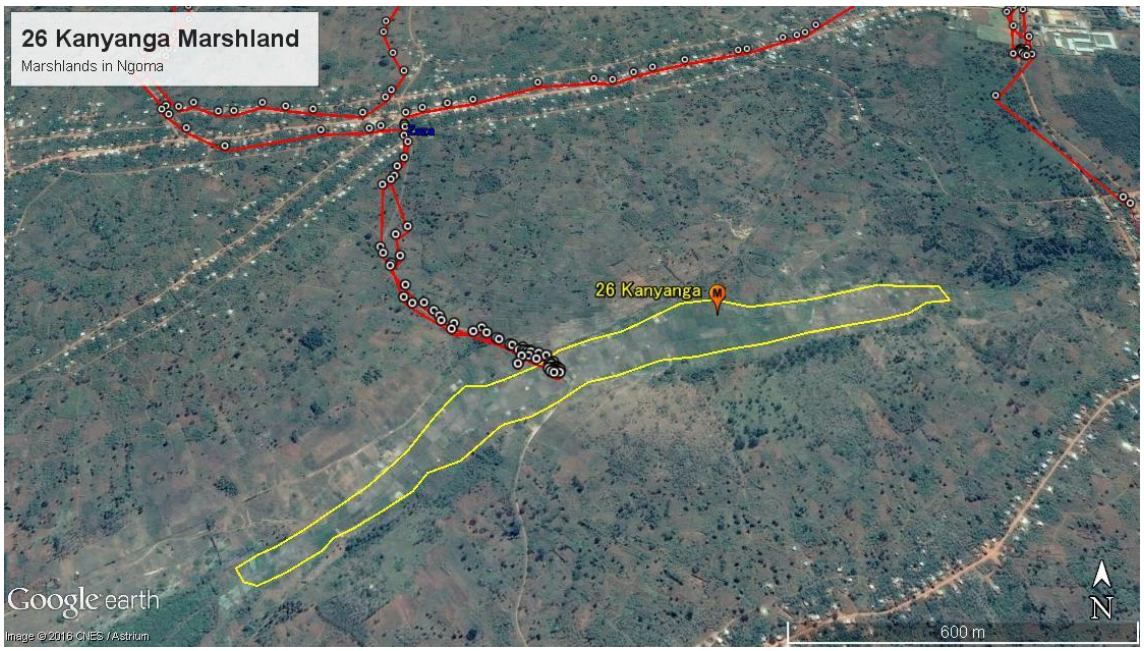
1)Sector :Zaza

2)Size: 14ha

3)Status＆Challenges: The shortage of water during dry season, no effective ponds

4)Main crop :Rice

5)Field visit date:11th May,2016



This Marshland has not been developed, and they cultivate rice.

The authority of the village showed us around.

The pond is not effective, it is recommended to make a good pond instead of this.

The farmers participated to the training of Picropp(JICA training course).

(27) Rwibuma/Gashununum Marshland

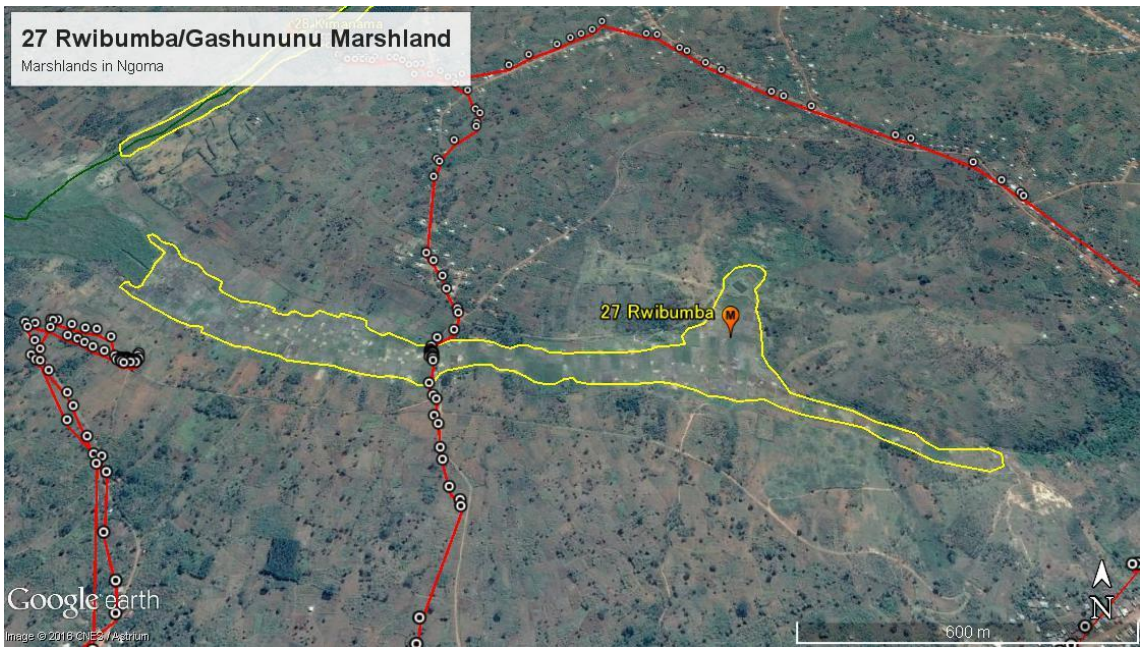
1)Sector :Zaza

2)Size: 18ha

3)Status&Challenges: Flood downstream and shortage of water in dry season, no irrigation canals

4)Main crop: Rice

5)Field visit date:11th May,2016



They cultivate rice. They are annoyed by the shortage of water in the upstream area of the command area.

There is flooded in the downstream area near the Mugesera Lake.

They started cultivating rice from 2005.The problem is that they don't have the dry area.

(28) Kimanama Marshland

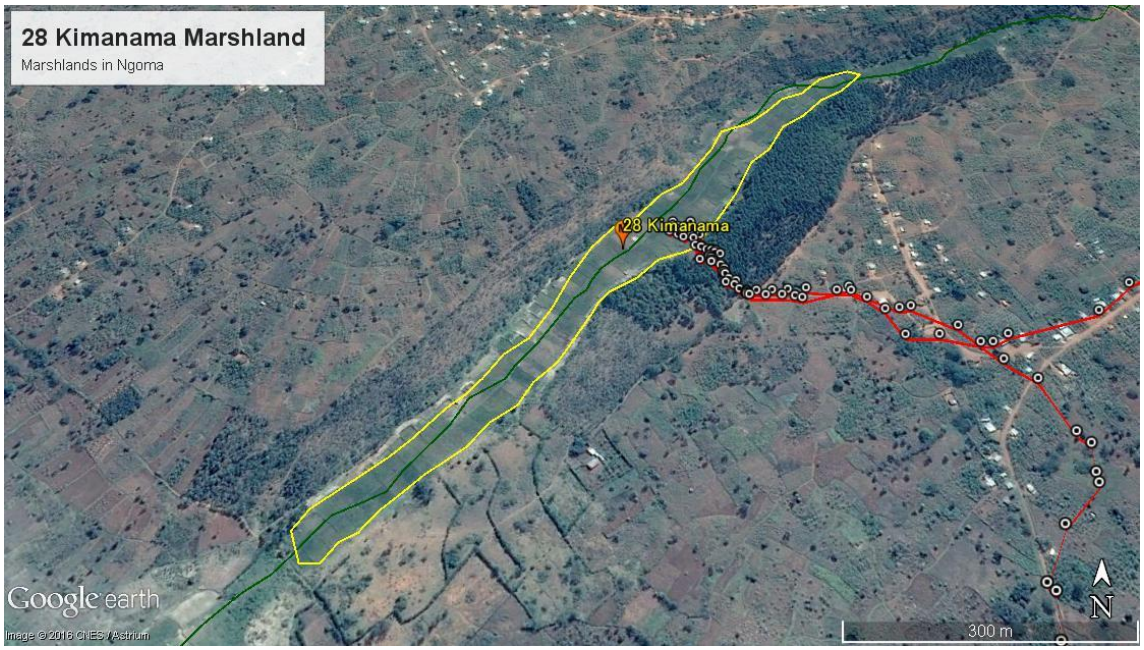
1)Sector :Zaza, Mugesera

2)Size: 6ha

3)Status＆Challenges :Not developed, No canals.

4)Main crop :Rice

5)Field visit date:11th May,2016



This Marshland is surrounded by the forestry, which protects the erosion and store water for Marshland.

Thanks to Agro-forestry, there is no erosion, and the water is enough.

This Marshland is like Japanese TANADA'(Rice terrace).

Here is Nut pine forestry.

The irrigation Adviser feels comfortable here like in Japan.

(29) Nyamizi Marshland

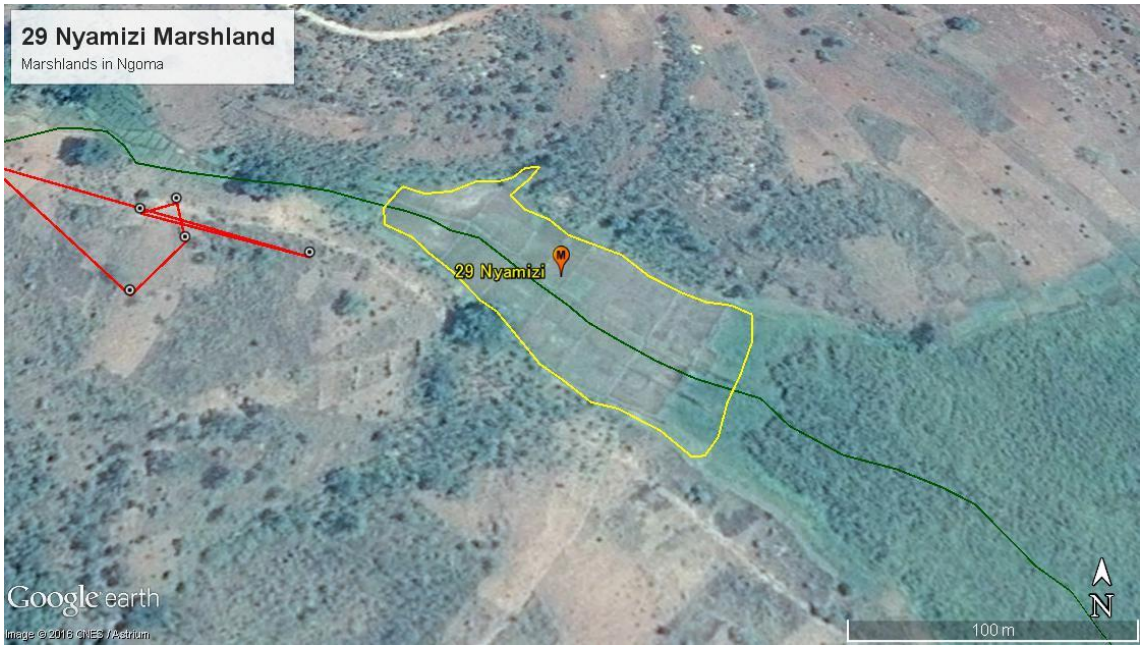
1)Sector :Sake, Jarama

2)Size: 2ha

3)Status&Challenges: Water is enough but the command area is too small. The downstream area is flooded during rainy season.

4)Main crop :Rice

5)Field visit date:11th May,2016



This Marshland is located in the steep valley.

The water resource of the Marshland is a spring.

They use this spring water for the domestic water.

This Marshland has not been developed, and the irrigation canals have some troubles.

This Marshland is like 'TANADA' also.

(30) Kinyangoro Marshland

1)Sector :Jarama

2)Size: 2ha

3)Status&Challenges: Near the swamp, they dig and make the command area in the Sake lake.

4)Main crop :Rice

5)Field visit date:11th May,2016

The farmers made this Marshland paddy field in the SAKE Lake.

The paddy field is inside the lake.

They dug the ridge of the lake shore and made the paddy field.

(31) Mubujaga Marshland

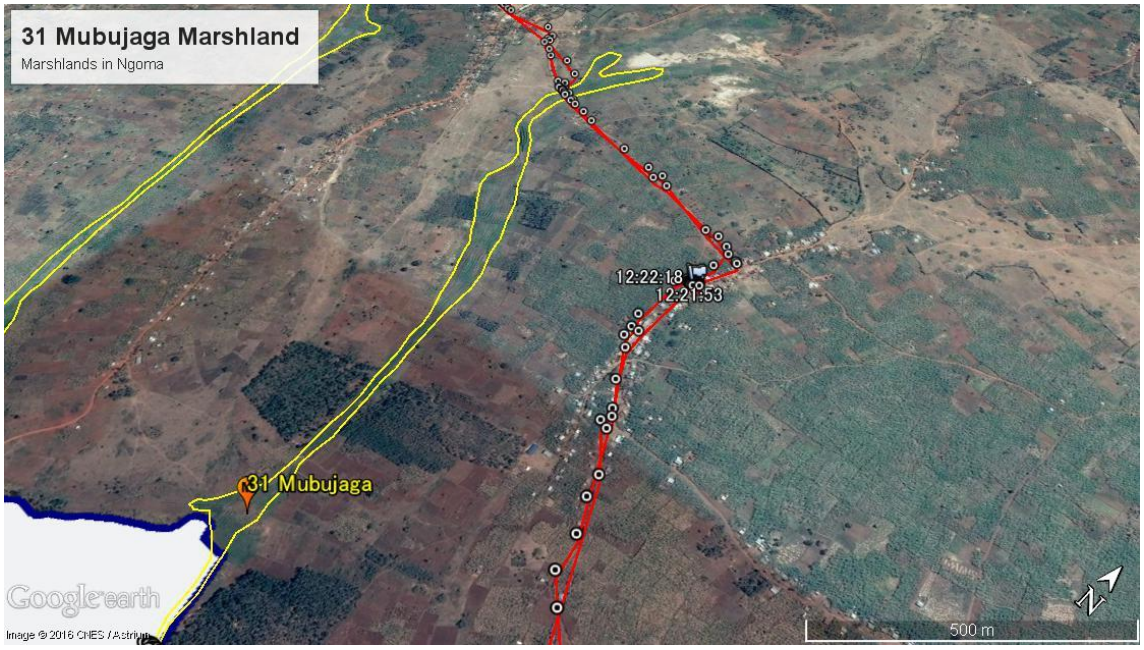
1)Sector :Rukira

2)Size: 8ha

3)Status&Challenges: There is a stream but farmers are cropping different crops.

4)Main crop: Vegetables, Potatoes, Maize and Sorghums

5)Field visit date:26th April,2016



The Sector Agronomist showed us around.

They grow different crops.

This is Sweet potatoes. There is enough water.

(32) Karisizo Marshland

1)Sector :Kazo

2)Size: 19ha

3)Status＆Challenges: Need training, they have enough water

4)Main crop: Rice

5)Field visit date:10th May,2016

You can see the command area of this marshland across the Akanyaru Swamp.

(33) Rwasoburo Marshland

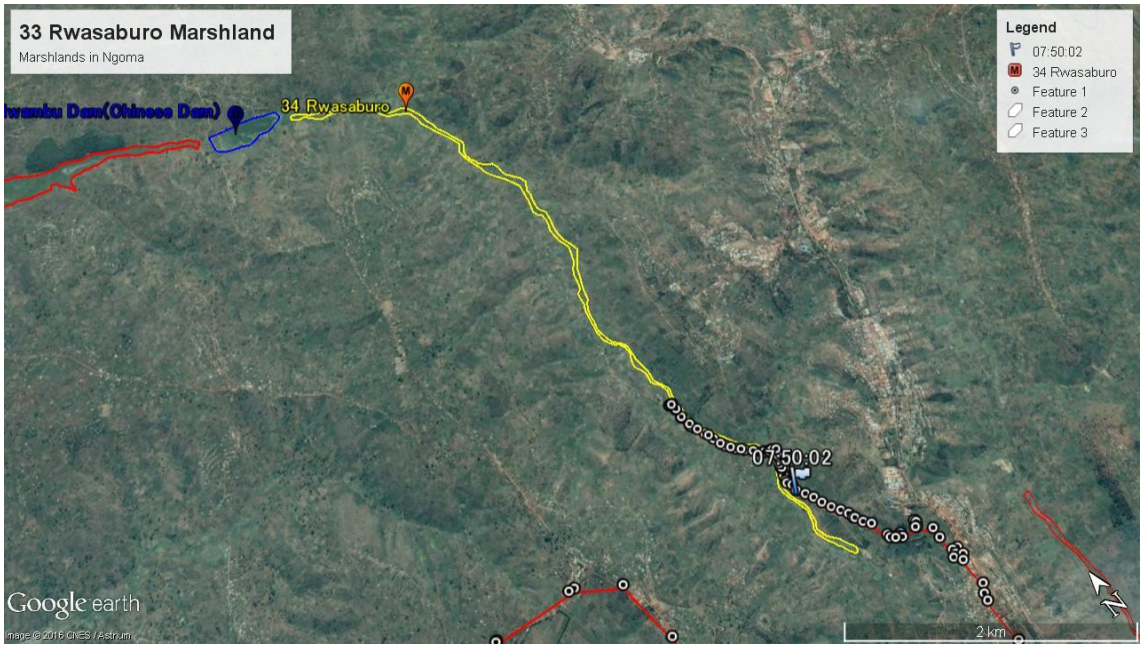
1)Sector :Kibungo

2)Size: 20ha

3)Status＆Challenges: Non-developed

4)Main crop: Sorghum, Vegetables

5)Field visit date:5th May,2016



(The end)