

REPUBLIKA Y'UBURUNDI

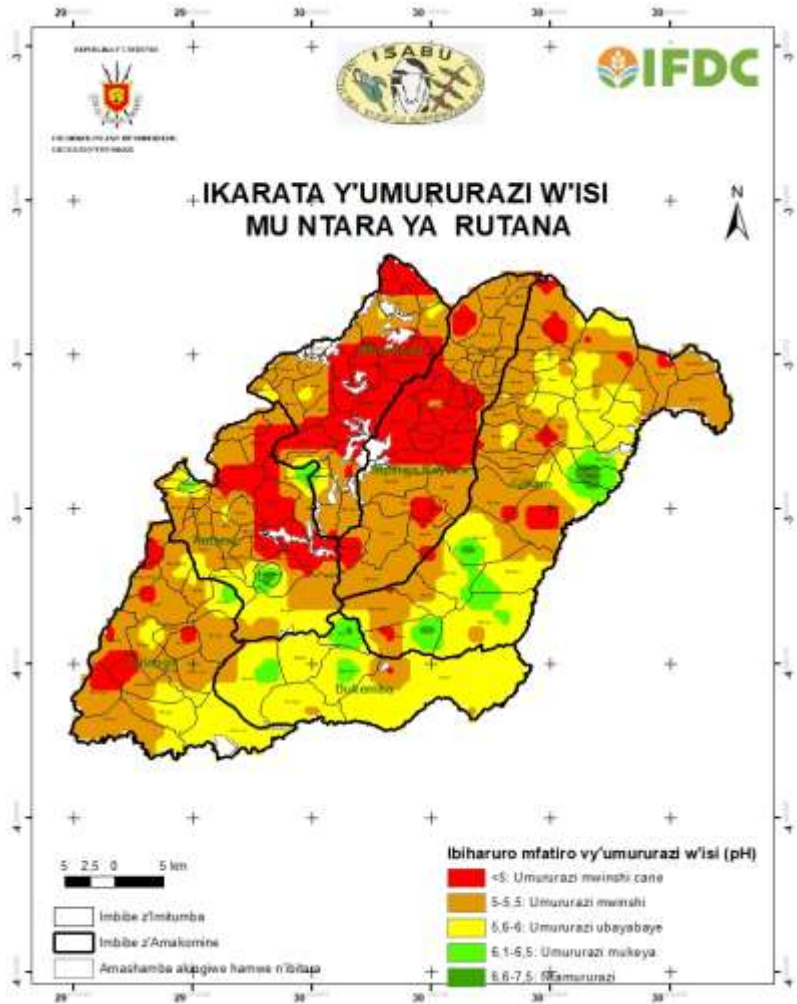


UBUSHIKIRANGANJI BW'IBIDUKIKIJE,  
UBURIMYI N'UBWOROZI



**AGATABU KEREKANA AMAKARATA  
Y'AKANOVERA K'ISI NDIMWA YO MU  
NTARA YA RUTANA**

Umwaka wa 2022



*Bujumbura, Ruheshi 2022*

## **IBIRIMWO**

1. INTANGAMARARA .....	3
1.1. Ingene akanovera k'isi ndimwa kifashe.....	3
1.2. Intumbero nyamukuru yayo makarata .....	4
2. INGENE IBIKORWA VYAKURIKIRANYE .....	4
3. IKARATA Y'UMURURAZI/UBUKARIHE (pH).....	5
3.1. Ibiharuro mfatiro vy'umururazi w'isi (pH).....	5
3.2. Ivyashitsweko .....	6
3.3. Ikarata y`umururazi (pH) .....	7
4. IKARATA Y'ICUNYUNYU NYARUBABI (N) .....	8
4.1. Ibiharuro mfatiro ku cunyunyu nyarubabi .....	8
4.2. Ivyashitsweko .....	8
4.3. Ikarata y`icunyunyu nyarubabi (N) .....	10
5. IKARATA Y'ICUNYUNYU RUKOMEZANGINGO (P) IGITERWA GISHOBORA GUKORESHA.....	11
5.1. Ibiharuro mfatiro ku cunyunyu rukomezangingo (mg/kg) .....	11
5.2. Ivyashitsweko .....	11
5.3. Ikarata y`icunyunyu rukomezangingo (P) igiterwa gishobora gukoresha .....	13
6. IKARATA Y'ICUNYUNYU NYARUTEKE (K) IGITERWA GISHOBORA GUKORESHA.....	14

6.1. Ibiharuro mfatiro ku cunyunyu nyaruteke (még ku magarama ijana y`ivu ryumye).....	14
6.2. Ivyashitsweko .....	14
6.3. Ikarata y`icunyunyu nyaruteke (K) igiterwa gishobora gukoresha .....	16
8. GUSOZERA .....	17
IVYONGEWEKO: Urugero rw`ishwagara ikoreshwa mu ndimo .....	18

# **1. INTANGAMARARA**

## **1.1. Ingene akanovera k'isi ndimwa kifashe**

Itituka ry'isi ndimwa mu Burundi ntrikiri agaseseshwa rumuri, bituma umwimbu ugabanuka kandi abantu nabo batera biyongera. Ibituma akanovera k'isi kagabanuka navyo ahani nibi bikurikira : kudakoresha neza ibisigarira vy'ivyimbirwa, kutarwanya inkukura ku rugero rushimishije, ubuhinga n'ubumenyi budakwiye mu guhingura no kurwiza ifumbire y'ikirundi,....

Kugira ngo isi isubire yimbuke, birakenewe ko hamenyekana ingene isi yifashe muri rusangi mu gihugu kugira ngo abafasha n'abakorera mu gisata c'uburimyi bisunge ibiharuro vya none.

Amararata yo mu ntara yafatiye ku rugero rw'umururazi w'isi (pH), ku vyunyuny : rukomezangingo (P), nyarubabi (N) na nyaruteke (K). Ubuhingura bwinshi burakoreshwa rero mu kugarukana akanovera k'isi ndimwa : gukoresha ifumbire y'ikirundi ; gukoresha ishwaraga, guhingura imicafu yo mu ngo n'ibisagara (ibigigarira vy'imfungurwa, umwanda muto na mukuru,

ibisigarira vyo mu mahinguriro,...), kurwanya inkukura, gukoresha neza ifumbire y'ikizungu, n'ibindi n'ibindi.

## **1.2. Intumbero nyamukuru yayo makarata**

Gufasha kugarukana akanovera k'isi mu kwerekana urugero rw'ivyunyuyu nyamukuru n'umururazi turiko kugira ngo abajewe gufata ingingo no kuzishira mu ngiro bavyisunge.

Kugira dushikire iryo hangiro hakoze ibi bikurikira:

- Gukora amakarata y'umururazi (pH), y'ivyunyuyu bikuru bikuru : nyarubabi, rukomezangingo (P) na nyaruteke (K);
- Gutanga insiguro y'ivyibonekeza ku makarata;
- Gutanga intumbero yo gufumbira isi ndimwa.

## **2. INGENE IBIKORWA VYAKURIKIRANYE**

Abakozi bo muri ISABU bafashanije n'abo mu gisata kijejwe gufumbira isi ndimwa mu bushikirangaji bw'ibidukikije, uburimyari n'ubworozi bafashwe mu mugongo na IFDC, baragiye mu gihugu cose batora ivu ry'isi ndimwa mu bibanza 1377. Iryo vu ryapimiwe muri ISABU. Inyuma yaho amakarata y'akanovera

n'umururazi w'isi ndimwa yarakozwe hisunzwe ibiharuro vyavuye munzu nsuzumiro (Laboratoire). Mu nama yo kuyemeza, hasabwwe ko hokorwa amakarata intara ku ntara n'insiguro yayo no gushika muri komine.

### 3. IKARATA Y'UMURURAZI/UBUKARIHE (pH)

#### 3.1. Ibiharuro mfatiro vy'umururazi w'isi (pH)

Urugero	Ibiharuro mfatiro vy'umururazi w'isi
umururazi mwinshi cane	< 5
umururazi mwinshi	5 - 5,5
umururazi ubayabaye	5,6 - 6,0
umururazi mukeya	6,1 - 6,5
nta mururazi	6,6 - 7,5 :
isi irimwo kariciyumu na manyesiyumu kurugero rwo hejuru.	> 7,5

### 3.2. Ivyashitsweko

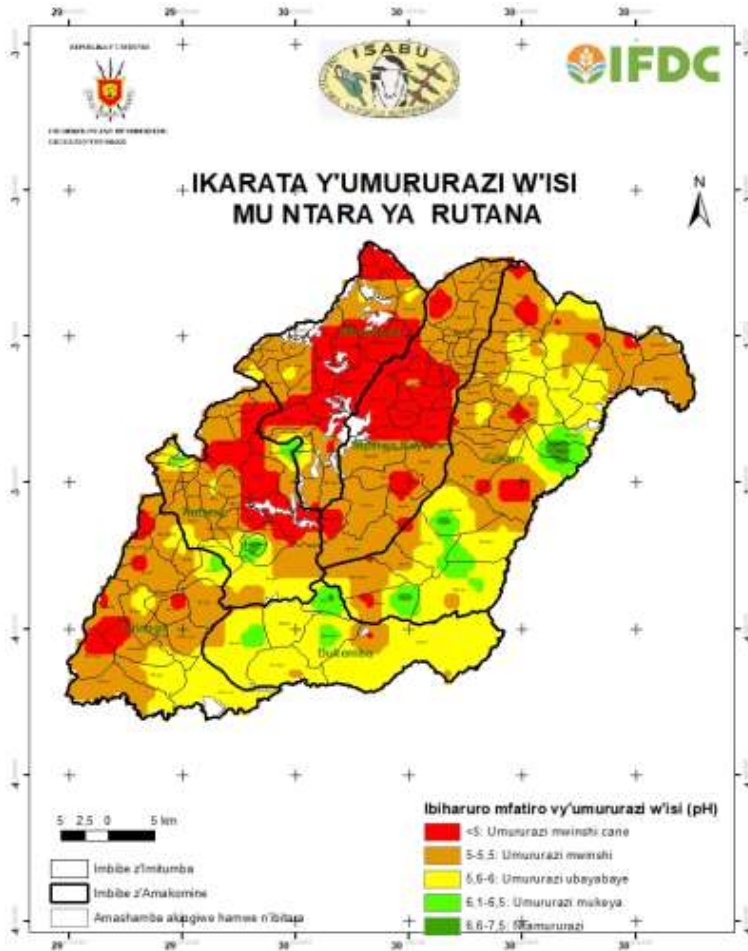
- Ibice birenga gato 66 kw' ijana (66 %) vy'isi ndimwa vyo mu ntara ya Rutana bifise umururazi mwinshi gushika kuri mwinshi cane;
- Ibice 29,5 kw`ijana (29,5%) vy`isi ndimwa bifise mururazi ubayebaye;
- Ibice bisigaye vy'isi ndimwa nta mururazi bifise;
- Ikomine ya Bukemba ifise isi ndimwa irimwo karisiyumu na manyeziyumu ku rugero rwo hejuru.

#### **Uburunganire bw`isi ndimwa dufatiye ku rugero rw`umururazi**

<b>Urugero rw`umururazi</b>	<b>Uburunganire (ha)</b>	<b>Ibice kw`ijana (%)</b>
Umururazi mwinshi cane	33285,2	18,6
Umururazi mwinshi	85270,8	47,6
Umururazi ubayabaye	52909,1	29,5
Umururazi mukeyi	6777,8	3,8
Nta mururazi	995,7	0,6
<b>Vyose hamwe</b>	<b>179238,5</b>	<b>100,0</b>



### 3.3. Ikarata y'umurazi (pH)



## 4. IKARATA Y'ICUNYUNYU NYARUBABI (N)

### 4.1. Ibiharuro mfatiro ku cunyunyu nyarubabi

Urugero	Urugero rwa nyarubabi kw`ijana (%)
Rukeyi cane	< 0,1
Rukeyi	0,1-0,2
Rubayabaye	0,2-0,5
Rukwiye	0,5-1,0
Rukwiye cane	>1,0

### 4.2. Ivyashitsweko

- Ibice birenga gato 42 kw`ijana (42%) vy'isi ndimwa bifise urugero rubayabaye ku cunyunyu nyarubabi;
- Ibice vyababa 57 kw`ijana (57 %) vy'isi ndimwa bifise urugero rukeyi ;
- Amakomine ya Rutana na Musongati afise urugero rukwiye ugereranije n`ayandi ma komine yo mu ntara ya Rutana.

*Uburinganire bw`isi ndimwa dufatiye ku rugero rw`icunyunyu nyarubabi*

<b>Urugero rw`icunyunyu nyarubabi</b>	<b>Uburinganire (ha)</b>	<b>Ibice kw`ijana (%)</b>
Rukeyi cane	368,1	0,2
Rukeyi	101641,9	56,7
Rubayabaye	76208,5	42,5
Rukwiye	1149,7	0,6
<b>Vyose hamwe</b>	<b>179368,2</b>	<b>100,0</b>



**5. IKARATA Y'ICUNYUNYU  
RUKOMEZANGINGO (P) IGITERWA  
GISHOBORA GUKORESHA**

**5.1. Ibiharuro mfatiro ku cunyunyu rukomezangingo  
(mg/kg)**

Urugero	Ibiharuro vya rukomezangingo (mg/kg)
Kiri ku rugero ruri hasi cane	0 - 5
Kiri ku rugero ruri hasi	5 - 20
Kiri ku rugero rubayabaye	20 - 50
Kiri ku rugero rukwiye	50 - 100
Kiri ku rugero rukwiye cane	>100

**5.2. Ivyashitsweko**

- Ibice birenga gato 76 kw`ijana (76%) vy`isi ndimwa vy`intara ya Rutana bifise icunyunyu rukomezangingo (P) kiri ku rugero ruri hasi;
- Ibice 99 kw`ijana (99 %) vy`isi ndimwa vy`intara ya Rutana bifise icunyunyu ca rukomezangingo kiri ku rugero ruri hasi cane.

**Uburinganire bw'isi ndimwa dufatiye ku rugero rw'icunyunyu rukomezangingo igiterwa gishobora gukoresha**

<b>Urugero</b>	<b>Uburinganire (ha)</b>	<b>Ibice kw'ijana (%)</b>
Ruri hasi cane	137086,6	76,4
Ruri hasi	41073,4	22,9
Rubayabaye	1203,9	0,7
<b>Vyose hamwe</b>	<b>179363,9</b>	<b>100,0</b>

### 5.3. Ikarata y'icunyunyu rukomezangingo (P) igiterwa gishobora gukoresha



## **6. IKARATA Y'ICUNYUNYU NYARUTEKE (K) IGITERWA GISHOBORA GUKOresha**

### **6.1. Ibiharuro mfatiro ku cunyunyu nyaruteke (még ku magarama ijana y`ivu ryumye)**

Urugero	Ibiharuro vya nyaruteke (még ku magarama ijana y`ivu ryumye)
urugero ruri hasi;	< 0,25
urugero rubayabaye ;	0,25-0,5
urugero rukwiye ;	0,5-1,0
urugero rukwiye cane.	>1,0

### **6.2. Ivyashitsweko**

- Ibice vyababa 17 kw`ijana (17%) vy'isi ndimwa vyo mu ntara ya Rutana bifise icunyunyu nyaruteke kibayabaye;
- Ibice 80 kw`ijana (80 %) vy'isi ndimwa vyo mu ntara ya Rutana bifise icunyunyu nyaruteke gikeyi.

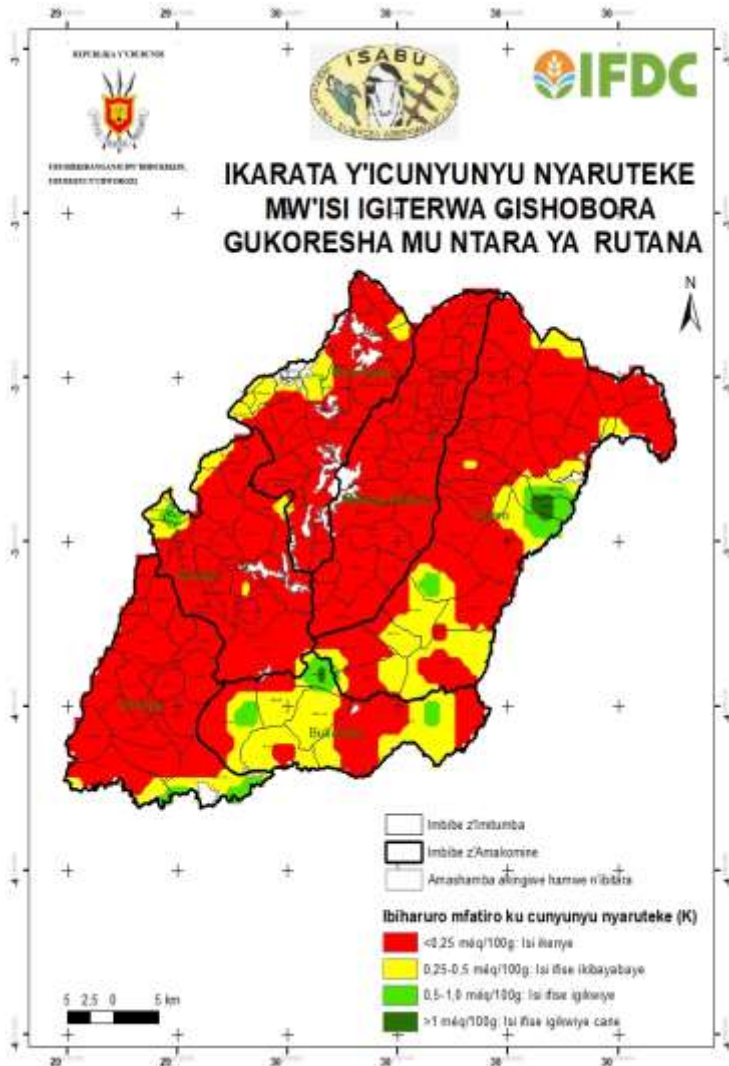


- Ibice 3 kw`ijana (3 %) vy`isi ndimwa vyo mu ntara ya Rutana bifise icunyunyu nyaruteke ku rugero rukwiye.
- Ibice bimwe bimwe vy`isi ndimwa vy`intara ya Rutana birimwo icunyunyu nyaruteke gikwiye biribonekeza mu bice vyikiyaya ca Moso.

**Uburinganire bw`isi ndimwa dufatiye ku rugero rw`icunyunyu nyaruteke (K) igiterwa gishobora gukoresha**

<b>Urugero</b>	<b>Uburinganire (ha)</b>	<b>Ibice kw`ijana (%)</b>
Urugero ruri hasi	143598,6	80,1
Urugero rubayabaye	29983,3	16,7
Urugero rukwiye	5135,6	2,9
Urugero rukwiye cane	549,4	0,3
<b>Vyose hamwe</b>	<b>179266,8</b>	<b>100,0</b>

### 6.3. Ikarata y'icunyunyu nyaruteke (K) igiterwa gishobora gukoresha



## **7. INSIGURO**

Isi ndimwa y'intara ya Rutana igizwe n'ibice mirongo itandatu na bitandatu kw'ijana (66 %) bifise ingorane y'umururazi. Amakomine yo mu kiyaya ca Moso nta mururazi afise. Icunyunyu nyarubabi (N) kiri ku rugero rubayabaye ku bice mirongo ine na bibiri kw'ijana (42%), nyaruteke (K) iri ku rugero rubayabaye ku bice cumi n'indwi kw'ijana (17%) ariko icunyunyu rukomezangingo (P) kiri ku rugero rudashemeye ku bice birenga mirongo icenda n'icenda kw'ijana (+99%).

## **8. GUSOZERA**

Icunyunyu rukomezangingo (P) gitegerezwa kwongerezwa mw'isi ndimwa y'intara yose ya Rutana. Ivyunyunyu nyarubabi (N) na nyaruteke (K) birakenewe kwongerezwa kugira ibiterwa bikure neza. Gukoresha ishwaraga mu kugabanura umururazi w'isi birafasha mu kubohora icunyunyu ca rukomezangingo (P) kiba caboshwe n'ivyunyunyu vy'ubumara. Gukoresha ifumbure y'ikirundi birafasha mu gusahiriza ifumbire y'ikizungu yarranzwe ikoresha.

**IVYONGEWEKO: Urugero rw’ishwagara ikoreshwa mu ndimo**

Ubwoko bw’isi	Ibipimo vy’umururazi w’isi	Urugero rwo kuvura isi	Urugero rwo kubungabunga isi
		Kg/are	Kg/are
Isi y’ibumba/inombe	< 4,7	17	6
	4,7-5,2	14	6
	5,2-5,7	7	5
	>5,7	0	0
Isi y’ikivuvu	< 4,7	14	5
	4,7-5,2	10	5
	5,2-5,7	7	4
	>5,7	0	0
Isi y’umusenyi	< 4,7	8	4
	4,7-5,2	5	4
	5,2-5,7	3	3
	>5,7	0	0
Ibi biharuro bifatiye kw’ishwagara ikorerwa mu burundi. Ibipimo vyayo ni: CaO:27% gushika kuri 30%; MgO:20% gushika kuri 21%			