



**ANNUAL REPORT**

**2020-2021**



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## **ABREVIATION**

NAP: National Agriculture Policy

MINAGRI: Ministry of Agriculture and Animal Resources

RAB: Rwanda Agriculture and Animal Resources Board

UR: University of Rwanda

CAVM: College of Agriculture, Animal science and Veterinary Medicine

RYAF: Rwanda Youth in Agriculture Forum

YEAN: Youth Engagement in Agriculture Network

YALTA: Youth in Agro-ecology and Business Learning Track Africa

NGO: Non- Government Organisation

PPP: Public Private Partnership

FY: Fiscal Year

## **2020-2021 Highlights of implemented activities from AGRIRESEARCH Organization's Action plan**

- Three research topics on potatoes were conducted successfully and the fourth one is still in progress.
- Ten (10) demonstration plots and three (3) farmer field school plots were installed with 292 recorded beneficiaries
- Two mobile applications (SmartInput and AGRITrials) were developed in promotion of ICT4Ag.
- Two campaigns “Youth engagement in agriculture campaign and Proper use of agriculture inputs (Agrochemicals)” were conducted successfully
- One research and extension club was initiated at University of Rwanda, Busogo campus, resulted to more than 400 students joined.



## EXECUTIVE SUMMARY

**AGRIRESEARCH** is a youth-led National Non-Governmental Organization (NGO) with its headquarters in Busogo, Musanze district. The Organization carries out agricultural Research and provide extension and advisory services. Its vision is to make Rwanda's agricultural industry a less-climate sensitive, environment friendly and leading economic sector. Actually, agriculture transformation and modernization require research and innovation at the central level. Introducing new varieties, disease mitigation strategies as well as improving farmers' knowledge and skills to support specialization, intensification, diversification, and value addition is critical<sup>1</sup>. Since 2020, AGRIRESEARCH Organization has started doing its activities as a local non-governmental organization in Rwanda, towards achieving food security for all and promoting inclusive safe and nutritious food to end hunger, malnutrition and poverty alleviation. In our first fiscal year (2020-21), the activities oriented to implementation of National Agriculture Policy (NAP) were carried out through building research capacity, promoting innovation and extension services.

This fiscal year (2020-21) has remarkably contributed to agriculture transformation in Rwanda in increasing crop productivity, youth engagement in agriculture, diversifying crop productivity and fostering research culture in youth. Through different collaborations, different research and extension activities were implemented. Three research topics on potatoes were conducted successfully and the fourth one is still in progress. Ten (10) demonstration plots and three (3) farmer field school plots were installed with 292 recorded beneficiaries. Two mobile applications (SmartInput and AGRITrials) were developed in promotion of ICT4Ag. Two campaigns

“Youth engagement in agriculture campaign via social media and Proper use of agriculture inputs (Agrochemicals) campaign” were conducted successfully. One research and extension club was initiated at University of Rwanda, Busogo campus, resulted to more than 400 students joined the club by doing and learning from its practical activities.

AGRIRESEARCH has continued its effort in reducing malnutrition where six (6) kitchen gardens were installed for the most vulnerable six families in Busogo sector, Musanze district. What is more fascinating it is how these families shared the quality vegetable seedlings to their neighbours resulted in further increase in number of families fighting malnutrition! There is a plan that in fighting against malnutrition, the number of kitchen gardens will be increased and extended to many families and continuing to support these families not only in reducing malnutrition but also in poverty alleviation sustainably.

In fact, there is a need of strengthening research capacity and bring together partners with a diverse set of capabilities to meet the agriculture research objectives. Demand-driven research will be ensured through better feedback loops and links to extension and an increased private sector involvement. This will also lead to wider and more rapid adoption<sup>2</sup>. Therefore, doing linked research and extension has more significant roles in building resilience and sustainability of our farming system. Nevertheless, there is a need of system integration and strong public-private partnership (PPP) to ensure effective and efficient research and extension services.

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1 Ministry of Agriculture and Animal Resources (2020). ANNUAL REPORT 2019-2020. Available on:

[https://www.minagri.gov.rw/fileadmin/user\\_upload/Minagri/Publications/Annual\\_Reports/Annual\\_report\\_2019-20\\_FY\\_.pdf](https://www.minagri.gov.rw/fileadmin/user_upload/Minagri/Publications/Annual_Reports/Annual_report_2019-20_FY_.pdf)

2 Ministry of Agriculture and Animal Resources (2018). National Agriculture Policy. Available on:

[https://www.minagri.gov.rw/fileadmin/user\\_upload/Minagri/Publications/Policies\\_and\\_strategies/National\\_Agriculture\\_Policy\\_-\\_2018\\_Aproved\\_by\\_Cabinet.pdf](https://www.minagri.gov.rw/fileadmin/user_upload/Minagri/Publications/Policies_and_strategies/National_Agriculture_Policy_-_2018_Aproved_by_Cabinet.pdf), Accessed on: Dec 13, 2020, 02:35 {PDF}



## CHAPTER I: RESEARCH ACTIVITIES

We have designed and executed four research projects on Irish potatoes: Environment friendly and cost effective of Late-blight control method, Environment friendly and crop compatible chemical fertilizer application method for Irish potatoes, Foliar application method of chemical fertilizers for Irish potatoes and Effect of earthing-up frequency on yield of Irish potato crop in Rwanda which is not yet finished. The case studies were Musanze district, Kinigi sector and Busogo sector.

The data were recorded and analyzed and research findings are soon to be published for validating and disseminating the new knowledge to the farmers through existing extension system. The model of linking research and extension services will undoubtedly help us not only in executing demand driven research but also making it easy in knowledge dissemination and technology transfer. Furthermore, it is the best model of receiving farmers' feedbacks on new technology and practices like performance of new varieties, adoption of new practices different from the existing ones, and farmers needs either to improve the existing technology or bringing the new one, etc.



## CHAPTER II: EXTENSION ACTIVITIES

The Organization has put its efforts in delivering agriculture extension and advisory services to



the farmers. Awareness campaign about proper and precise use of agro-chemicals (Fertilizers and pesticides) were done, where the farmers have gained skills on proper use of agricultural inputs, and as the results, now some of them are doing environment friendly agriculture and biodiversity network is being conserved and protected.

Furthermore, ten (10) demonstration plots and 3 farmer field school plots (FFS) were installed with the purpose of demonstrating good agricultural practices to the farmers so as to

increase their productivity. In this context, many farmers learnt on these activities and their productions were increased respectively, as Good Agricultural Practices (GAPs) were adopted. Recorded beneficiaries in season 2020A and B are 292 farmers from Musanze district, Busogo, Gataraga, and Kimonyi sector. Crop productivity increase of the farmers who worked with AGRIRESEARCH organization in season 2020A and B is as follow: Maize from 1.5T/ha to 4.6T/ha, Potatoes from 10.3T/ha to 25T/ha, Wheat from 1.5T/ha to 3.6T/ha and beans from 1.5T/ha to 2.75T/ha. These extension services were provided in Musanze district. However, we hope to extend such services to other districts of the country, Rwanda.

We established a club in UR-CAVM, as way of fostering the research culture in fellow youth and generally engaging youth in agriculture. Now a club is helping the students from the University of Rwanda College of Agriculture, Animal science and Veterinary Medicine to be engaged in agriculture and get connected to the research and extension activities and helping the farmers around the campus as well. Club has 108 active members. We aimed at establishing other research and extension clubs in different high schools, colleges, institutions



and universities but only one was established successfully. The challenge includes but not limited to covid-19. To date, more than 400 students have learnt practical skills from the club.



AGRIRESEARCH Organization has set strategies to relentlessly work towards alleviating poverty and reducing malnutrition rate in Rwanda. In our last fiscal year 2020-21, 6 kitchen gardens were installed for the six most vulnerable families in Musanze district, Busogo sector. It is planned that the number of supported households will be increased in this coming fiscal year and continuing to follow-up them until the matter of malnutrition and stunting is resolved sustainably.

## II.1. DIGITAL EXTENSION TOOLS

As mobile phones and internet usage grows, the use of information and communication technologies (ICTs) in agriculture is becoming more ubiquitous. Therefore, we have developed two android compatible applications: **SmartInput** and **AGRITrials**.

**SmartInput** is an android application that was developed to help farmers precisely use agricultural inputs including seeds, fertilizers and pesticides. It also contains useful information on good quality seed, where depending on the crop a farmer is willing to grow in the current season, they can readily have access to respective information. Briefly, **SmartInput** ensures a good-safety level use of agrochemicals by growers; and this is a helpful to reduce chemical residues in agricultural products, protecting consumers from the potentially harmful chemicals. Furthermore, SmartInput was featured in youth solutions report 2020 by United Nations, Sustainable Development Solutions Network (UNSDSN) after emerging among 50 global game-changing innovative projects worldwide. The farmers that were skilled on the app are now making agriculture more efficiency and environment-friendly.

**AGRIRESEARCH**  
NON-GOVERNMENTAL ORGANIZATION

**WE DO  
AGRICULTURAL  
RESEARCH AND  
EXTENSION  
SERVICES**

**MISSION**  
To increase youth engagement in agriculture.  
To diversify crop production. To increase crop  
productivity. To reduce post-harvest losses.  
To foster research culture in youth.

**VISION**  
To make Rwanda's agriculture a less climate-sensitive,  
environment-friendly, economically leading sector.

Learn more

Agriresearch rwanda @AGR\_RESEARCH agriresearchorganization@gmail.com www.agriresearch.rw



**AGRITrials** is an android application that was developed to connect farmers and field experts to share knowledge and experience across wide range of topics including Agricultural research and extension services. **AGRITrials** is most specifically a question and answer (Q & A) platform where farmers and agripreneurs can clear their professional challenges and learn new skills on the go. It also provides daily and season weather and climate information so as to help farmers in decision-making depending on weather and climate information.

So far, more than 400 farmers, agronomists and field experts have already joined AGRITrials app with the majority from Rwanda, Nigeria, Kenya and United Kingdom respectively. This App is also now helping farmers to get connected to the market of their produce either local or international. AGRITrials has received resilience fund from Ministry of Youth and Culture as innovative project against COVID-19 and won Video competition as the best digital extension tool worldwide by USAID Feed the Future, Developing Local Extension Capacity (DLEC) Project.

## II.2. CAMPAIGNS

### Youth Engagement in Agriculture Campaign via social media

In collaboration with Rwanda Youth in Agriculture Forum (RYAF), Youth Engagement in Agriculture Network (YEAN) and Youth in Agro-ecology and Business Learning Track Africa (YALTA), AGRIRESEARCH organization has organized the youth engagement in agriculture campaign via social media. More than 30,000 including students from UR/CAVM, Youth Agricultural Innovators, Youth forums, Farmer organizations and other institutions were reached out through social media and webinar and got insights on theme **“Contribution of youth in Agriculture to the world’s pathway of success”**. The campaign has eventually proved to youth and widens their view to see agriculture not only as crop cultivation, but all those opportunities that bud from it and a wider field that hosts more inventions.



**Youth engagement  
in agriculture campaign  
via social media**

**THEME**

**The contribution of  
youth in agriculture  
to the world's pathway of success**

**Date: 17 - 21, May 2021**

  

## Precise use of agriculture inputs (Agrochemicals) Campaign in Musanze district

Pesticides and chemical fertilizers malpractice among small -scale farmers have contributed to environmental pollution. Offsite movement of transformation products of pesticides and chemical fertilizers contaminate ground water, exposing humans to the chemicals through drinking water, and harm the aquatic ecosystem, leading to the death of fishes and pollinators. Similarly, defective chemical fertilizers application methods have harmful effects on both our surroundings and health. Equipping growers and agrochemicals dealers with sufficient knowledge regarding proper use, handling and the potential dangers of pesticides improper practices is the only practically feasible solution. In fact, farming communities, especially the developing worlds' have not a good level of such knowledge.

In this context, AGRIRESEARCH Organization in collaboration with MUSANZE district has organized the campaign on the proper use of agriculture input (Agrochemicals). The campaign has brought together Musanze district director of agriculture and natural resources, district agronomist and all Musanze sector agronomists, to discuss together the status of this problem in this district and a way forward to help small scale and other farmers to access real-time information on the use of agricultural inputs as precise and simple as possible to increase farm productivity and profitability while ensuring farmers safety and protecting the environment



**AGRIRESEARCH** organization works towards linking up agricultural research and extension services. This helps in dissemination and quick adoption of new findings aiming at boosting yield



**MODEL FARM,**

establishment completed hosts 4 different crops (carrots, beetroot, garlic and courgette) farmed modernly, it is aiming to help farmers have a big view of good agricultural paractices (GAP) for different crops at time. they shall get some modern techniques for boosting their production.

**In season 2020A and B, 10 demo plots and 3 FFS plots were installed. Recorded beneficiaries are 292 from Musanze district, Busogo, Gataraga, and Kimonyi sector**

**MODEL FARM INSTALLATION BY AGRIRESEARCH TECHNICIANS**



## CHAPTER III: TRANSFORMATIONAL IMPACTS OF OUR ACTIVITIES

Since AGRIRESEARCH organization started its operations on the territory of Rwanda in 2020, many changes were observed and beneficiaries witness how working with this organization has helped them in improving their standards of living. In fact, our last fiscal year (2020-2021) has remarkably proved to us that working relentlessly to support smallholder farmers is a key to agriculture transformation and building sustainable resilient food systems. The following are some transformational impacts recognized in our last fiscal year.



1. In season 2020A and B, 10 demo plots and 3 FFS plots were installed. Recorded beneficiaries in season 2020A and B are 292 from Musanze district, Busogo, Gataraga, and Kimonyi sector and have learnt a lot and adopted good agriculture practices that helped them to improve their crop productivity through our inclusive extension services. Farmer promoters and farmer field school facilitators were trained on good agriculture practices (GAPs) which helped us in dissemination and implementation of new technologies to the farmers. Crop productivity has been remarkably well increased. Maize from 1.5T/ha to 4.6T/ha, Potatoes from 10.3T/ha to 25T/ha, Wheat from 1.5T/ha to 3.6T/ha and beans from 1.5T/ha to 3.75T/ha.

2. Rwanda's economic growth in last decades is definitely impressive. However, stunting rate is overwhelmingly at high rate countrywide. This has called forth different policy makers in addressing the issue. Demand-driven approaches were brought in place to mitigate malnutrition rate in Rwanda. AGRIRESEARCH Organization has set strategies to relentlessly work towards alleviating poverty and reduce malnutrition rate in Rwanda. In our last fiscal year 2020-21, 6 kitchen gardens were installed for the six most vulnerable families in Musanze district, Busogo sector. It is planned that the number of supported households will be increased in this coming fiscal year and continuing to follow-up them until the matter of malnutrition and poverty is resolved.
3. Youth engagement in agriculture is nothing but a pillar to agriculture transformation. Through initiation of research and extension club at University of Rwanda College of agriculture, animal science and veterinary medicine, Busogo campus, besides 108 active members, more than 400 youths studying agriculture have continuously learned practical skills from club's activities including but not limited to doing research on different crops and community outreach. Furthermore, more than 90% of agriculture graduates who were club members since they were students, have continued in doing agribusiness and other agriculture related activities after studies, which is different from those who didn't show the inclination of joining the club while they were students.
4. According to our youth engagement in agriculture campaign via social media report, the campaign that occurred from May 17-21th, 2021, which brought together youth from different countries including Rwanda, public institutions and private sectors, NGOs, and farmers organization, more than 30, 000 of people were reached and different perceptive people's insights regarding youth engagement in agriculture including strategies, opportunities and challenges were addressed through different social media platforms and webinar meetings. Besides of transformational impacts recognized at the end of the campaign, the report has brought together the challenges and recommendations concerning youth engagement in agriculture and we hope that through Public-Private Partnership (PPP), they are going to work relentlessly to support youth towards agriculture development.
5. Exercising innovative and imaginative thoughts is at the very core of implementing agriculture policies. In fact, agriculture digitalization is certainly at the crux of transforming agriculture. Promoting ICT for agriculture (ICT4Ag) is very crucial in building resilience and sustainability. In this context, two android applications (SmartInput and AGRITrials) were developed to increase farmers' crop productivity. SmartInput is helping many farmers to use precise agricultural inputs (Seed, fertilizers and pesticides) and has been featured in youth solutions report 2020 by United Nations, Sustainable Development Solutions Network (UNSDSN) after emerging among 50 global game-changing innovative projects worldwide. AGRITrials is now out and available both online and offline. More than 400 users including farmers, agronomists and field experts have already joined AGRITrials app with the majority from Rwanda, Nigeria, Kenya and United Kingdom respectively. This app has helped so far its users accessing local and international markets as well as sharing knowledge and experience across wide range of topics regarding agricultural research and extension services. AGRITrials received resilience fund from Ministry of Youth and Culture as innovative project against COVID-19 and won Video competition as the best digital extension tool worldwide by USAID Feed the Future, Developing Local Extension Capacity (DLEC) Project.

6. According to Food and Agriculture Organization Report of Digital agriculture profile on Rwanda, 60% of men and 38% of women own a mobile phone. 52% of the population uses internet and Rwanda is ranked as 2nd country in Africa with fastest internet<sup>3</sup>. In this context, AGRIRESEARCH organization has its active social media platforms where most of our agriculture related information channelled. This model has increased the usage of ICT4Ag especial for youth in communication and knowledge sharing. It is also the best feedback loops to us from our stakeholders thus benefited them in many ways.

- Twitter: 1550 Followers, 1,926 Tweets
- Facebook: 1,022 Followers
- YouTube: 209 subscribers, 9 videos
- Instagram: 129 followers, 58 Posts
- LinkedIn: 76 followers, 150 Posts



A farmer promoter GAKURU from Kimonyi sector, Musanze district, witnessing how AGRIRESEARCH has helped them to boost maize yield (<https://youtu.be/lhQgy7Uuq-k>)

3 Food and Agriculture Organization of the United State. "Digital Agriculture Profile, Rwanda", 2021. Available on: <https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.fao.org/documents/card/en/c/CB2507EN/&ved=2ahUKEwigzJi8jb31AhVH6RoKHVTGCssQFnoECAkQAQ&usg=AOvVaw0-IlkSrTn6N5mF7Dg1nxzV>