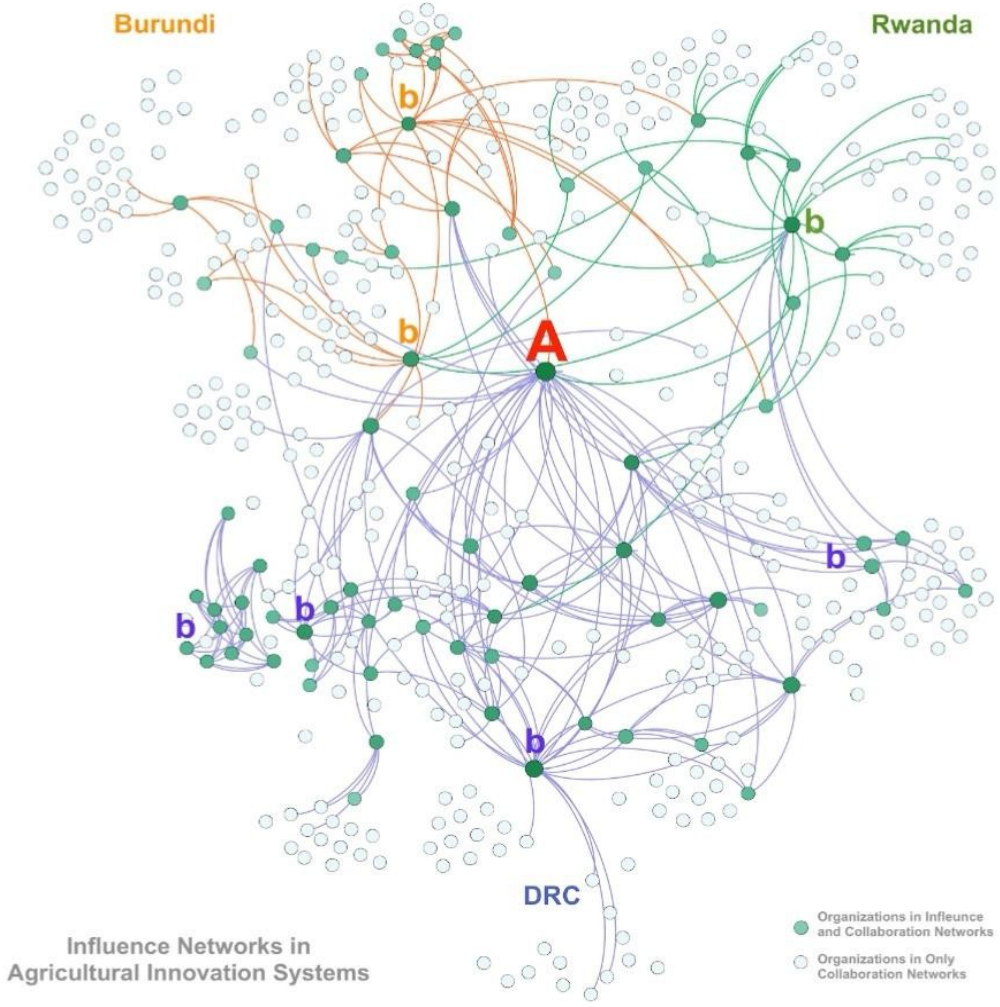
Social Network Analysis for Strategizing Multi-stakeholder Process

Murat Sartas

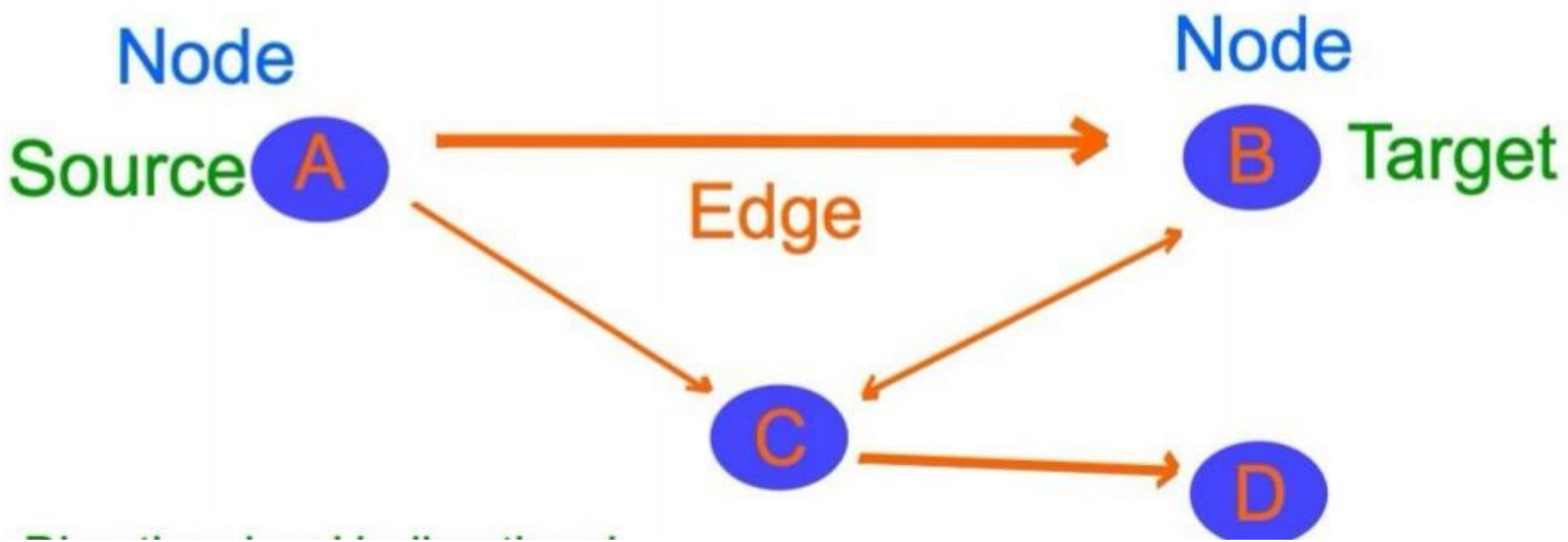


BASICS

What is Social Network Analysis?

It is a map that shows

- Actors in the (innovation) network
- The connections between these actors



Why it is useful?

Social network analysis can provide a scientific answer to the questions of

1. Who can help with the objective in the short term
    a. With skills
    b. With funds
    c. As champions
    d. … .
2. How the project needs to engage
    a. In the platform (developers)
    b. In high level meetings (influences)
    c. In dissemination events (users)

SCIENCE OF INNOVATION NETWORKS

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- **Sartas, M., Schut, M**., Hermans, F., van Asten, P., & Leeuwis, C. (2018). Effects of multi-stakeholder platforms on multi-stakeholder innovation networks: Implications for research for development interventions targeting innovations at scale. PloS one, 13(6), e0197993.
- Hermans, F., **Sartas, M.**, Van Schagen, B., van Asten, P., & **Schut, M.** (2017). Social network analysis of multi-stakeholder platforms in agricultural research for development: Opportunities and constraints for innovation and scaling. PloS one, 12(2), e0169634.
- FAO (**Schut, M, Sartas M.,** ..) Report on Agricultural Innovation Systems in Rwanda

PLOS ONE

RESEARCH ARTICLE

Effects of multi-stakeholder platforms on multi-stakeholder innovation networks: Implications for research for development interventions targeting innovations at scale

Murat Sartas[1,2,3]*, Marc Schut[1,2], Frans Hermans[4], Piet van Asten[5], Cees Leeuwis[1]

1 Knowledge, Technology and Innovation Group, Wageningen University, Wageningen, The Netherlands, **2** International Institute of Tropical Agriculture (IITA), Kigali, Rwanda, **3** Swedish University of Agricultural Sciences (SLU), Rural development and natural resource management, Uppsala, Sweden, **4** Leibniz Institute for Agricultural Development in Transition Economies (IAMO), Halle (Saale), Germany, **5** International Institute of Tropical Agriculture (IITA), Kampala, Uganda

* m.sartas@cgiar.org

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Data Availability Statement: All relevant data files are available from the Figshare repository at the following: https://figshare.com/articles/Data_Set_for_the_Research_Article_Effects_of_multi-stakeholder_platforms_on_multi-stakeholder_innovation_networks_Implications_for_research_for_development_interventions_targeting_innovations_at_scale/6282686.

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Abstract

Multi-stakeholder platforms (MSPs) have been playing an increasing role in interventions aiming to generate and scale innovations in agricultural systems. However, the contribution of MSPs in achieving innovations and scaling has been varied, and many factors have been reported to be important for their performance. This paper aims to provide evidence on the contribution of MSPs to innovation and scaling by focusing on three developing country cases in Burundi, Democratic Republic of Congo, and Rwanda. Through social network analysis and logistic models, the paper studies the changes in the characteristics of multi-stakeholder innovation networks targeted by MSPs and identifies factors that play significant roles in triggering these changes. The results demonstrate that MSPs do not necessarily expand and decentralize innovation networks but can lead to contraction and centralization in the initial years of implementation. They show that some of the intended next users of interventions with MSPs–local-level actors–left the innovation networks, whereas the lead organization controlling resource allocation in the MSPs substantially increased its centrality. They also indicate that not all the factors of change in innovation networks are country specific. Initial conditions of innovation networks and funding provided by the MSPs are common factors explaining changes in innovation networks across countries and across different network functions. The study argues that investigating multi-stakeholder innovation network characteristics targeted by the MSP using a network approach in early implementation can contribute to better performance in generating and scaling innovations, and that funding can be an effective implementation tool in developing country contexts.

Introduction

Stakeholder involvement is essential to overcome complex agricultural and environmental problems and achieve development outcomes. Multi-stakeholder platforms (MSPs) are seen as

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RESEARCH ARTICLE

Social network analysis of multi-stakeholder platforms in agricultural research for development: Opportunities and constraints for innovation and scaling

Frans Hermans[1], Murat Sartas[2,3,4], Boudy van Schagen[5], Piet van Asten[6], Marc Schut[2,3]*

1 Leibniz Institute for Agricultural Development in Transition Economies (IAMO), Theodor-Lieser-Strasse 2, Halle (Saale), Germany, **2** Knowledge, Technology and Innovation Group, Wageningen University, EW Wageningen, The Netherlands, **3** International Institute of Tropical Agriculture (IITA), Kacyiru, Kigali, Rwanda, **4** Swedish University of Agricultural Sciences (SLU), Department of Urban and Rural Development, Ulls väg Uppsala, Sweden, **5** Bioversity International, Quartier Kabondo, Rohero 1, Avenue 18 Septembre 10, Bujumbura, Burundi, **6** International Institute of Tropical Agriculture (IITA), Kampala, Uganda

* m.schut@cgiar.org

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Funding: This work was funded under the framework of the Consortium for Improving Agricultural Livelihoods in Central Africa (CIALCA), which is funded by the Belgian Directorate General for Development Cooperation and Humanitarian Aid (DGD). CIALCA forms part of the CGIAR Research Program on Integrated Systems for the Humid Tropics (Humidtropics), and the CGIAR

Abstract

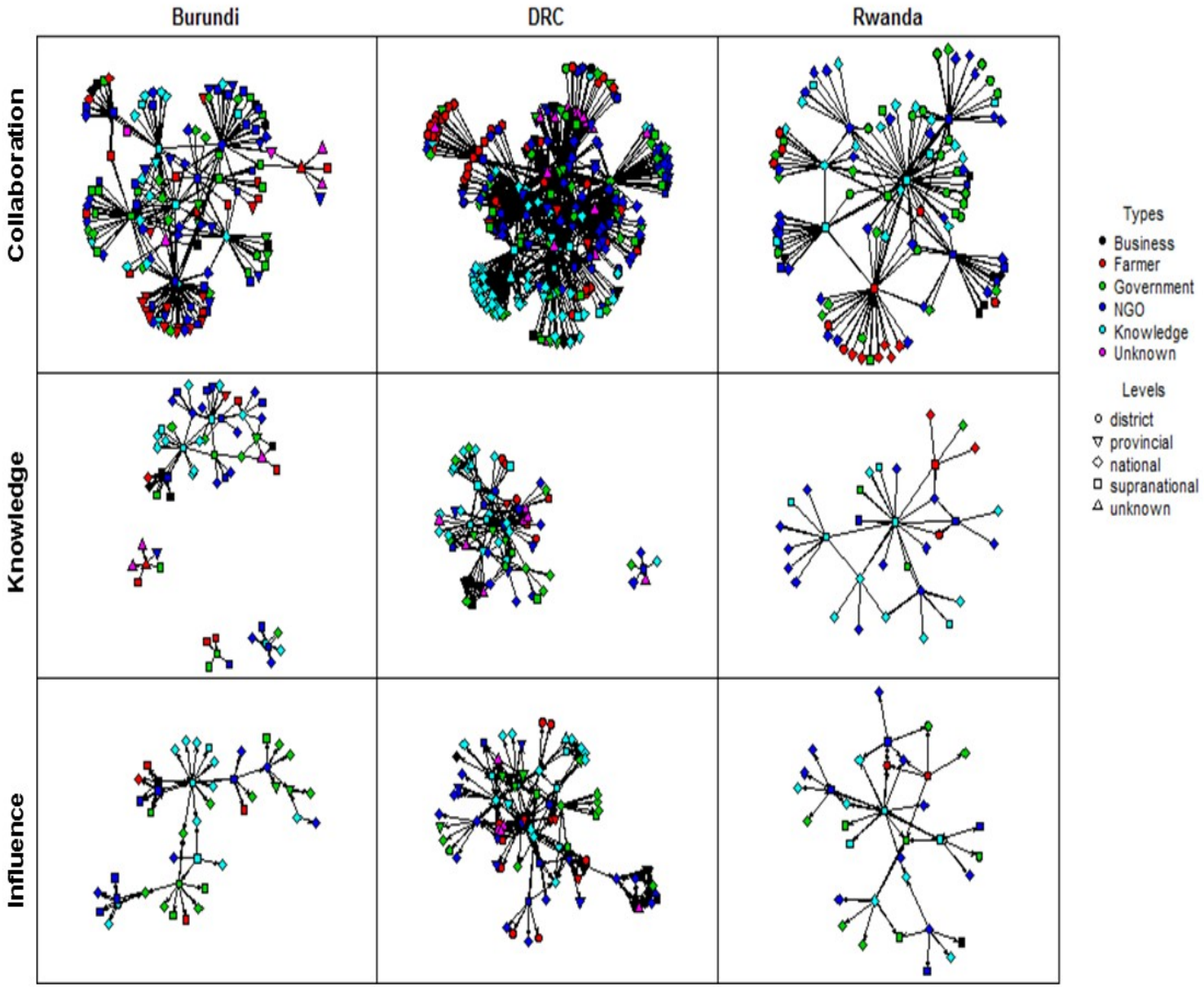
Multi-stakeholder platforms (MSPs) are seen as a promising vehicle to achieve agricultural development impacts. By increasing collaboration, exchange of knowledge and influence mediation among farmers, researchers and other stakeholders, MSPs supposedly enhance their 'capacity to innovate' and contribute to the 'scaling of innovations'. The objective of this paper is to explore the capacity to innovate and scaling potential of three MSPs in Burundi, Rwanda and the South Kivu province located in the eastern part of Democratic Republic of Congo (DRC). In order to do this, we apply Social Network Analysis and Exponential Random Graph Modelling (ERGM) to investigate the structural properties of the collaborative, knowledge exchange and influence networks of these MSPs and compared them against value propositions derived from the innovation network literature. Results demonstrate a number of mismatches between collaboration, knowledge exchange and influence networks for effective innovation and scaling processes in all three countries: NGOs and private sector are respectively over- and under-represented in the MSP networks. Linkages between local and higher levels are weak, and influential organisations (e.g., high-level government actors) are often not part of the MSP or are not actively linked to by other organisations. Organisations with a central position in the knowledge network are more sought out for collaboration. The scaling of innovations is primarily between the same type of organisations across different administrative levels, but not between different types of organisations. The results illustrate the potential of Social Network Analysis and ERGMs to identify the strengths and limitations of MSPs in terms of achieving development impacts.

RECENT EVIDENCE

Different network configurations

- Country based differences
- Function based differences
- Actor based differences

Can a single approach work?



Hermans, Sartas

Different network densities

- Area based differences
- Function based differences

Can a single approach work?

Network Densities of Agricultural Innovation Networks

	Kayonza	Kadahenda	Ratio
Collaboration	6.44	11.95	1.86
Knowledge Exchange	5.24	9.85	1.88
Influence	4.52	9.83	2.17
Communication	4.57	9.14	2.00
Capacity Development	5.00	8.50	1.70
Social Interaction	4.95	2.84	0.57
Common Vision	5.23	4.76	0.91
Fund Access	3.18	2.32	0.73

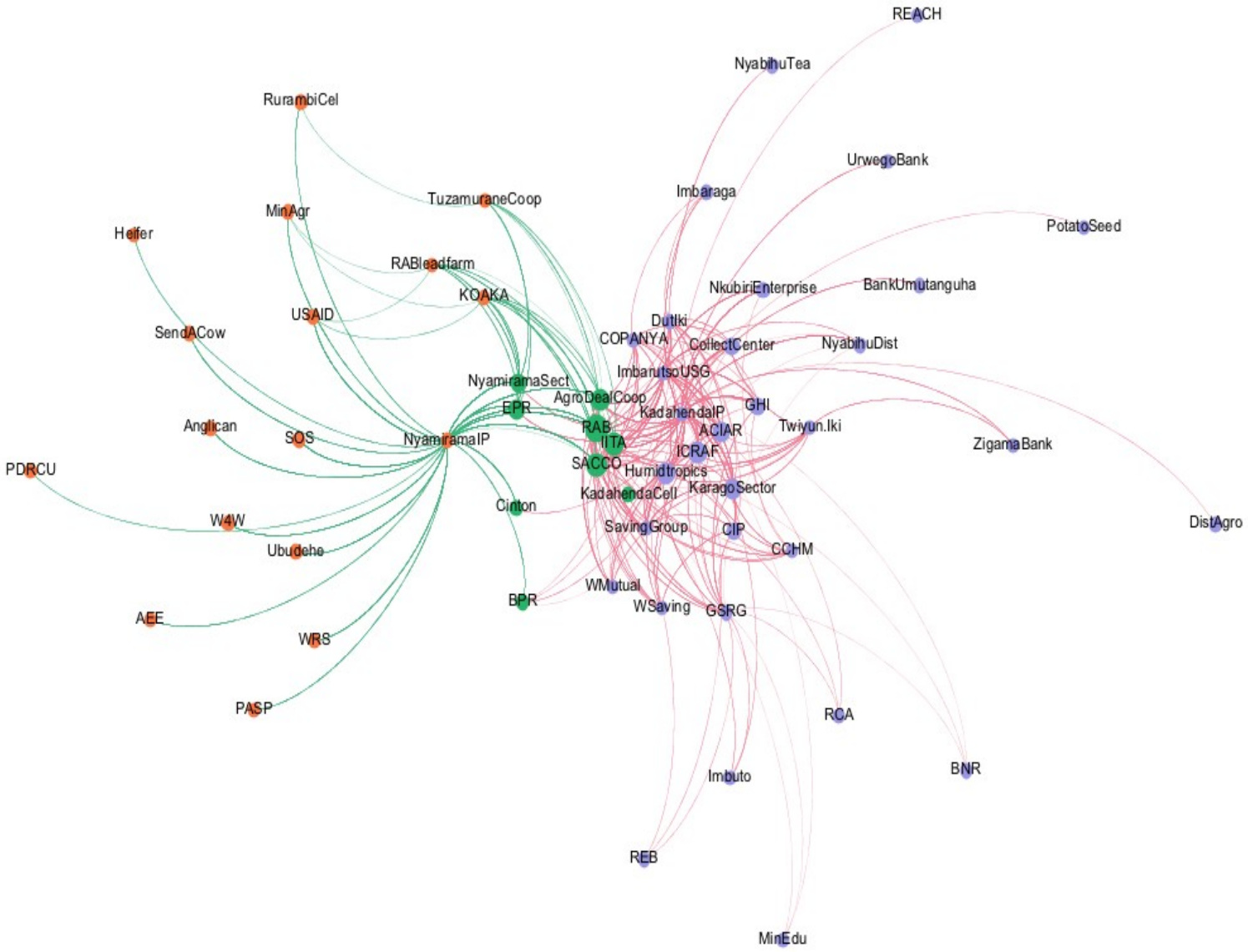
FAO, 2017, Report on Rwanda Agricultural Innovation System

Different network positions

- Where are the innovation platforms?
- Which innovation platform is more important for agricultural innovation networks?

Can a single approach work?

Agricultural Innovation Network in Rwanda



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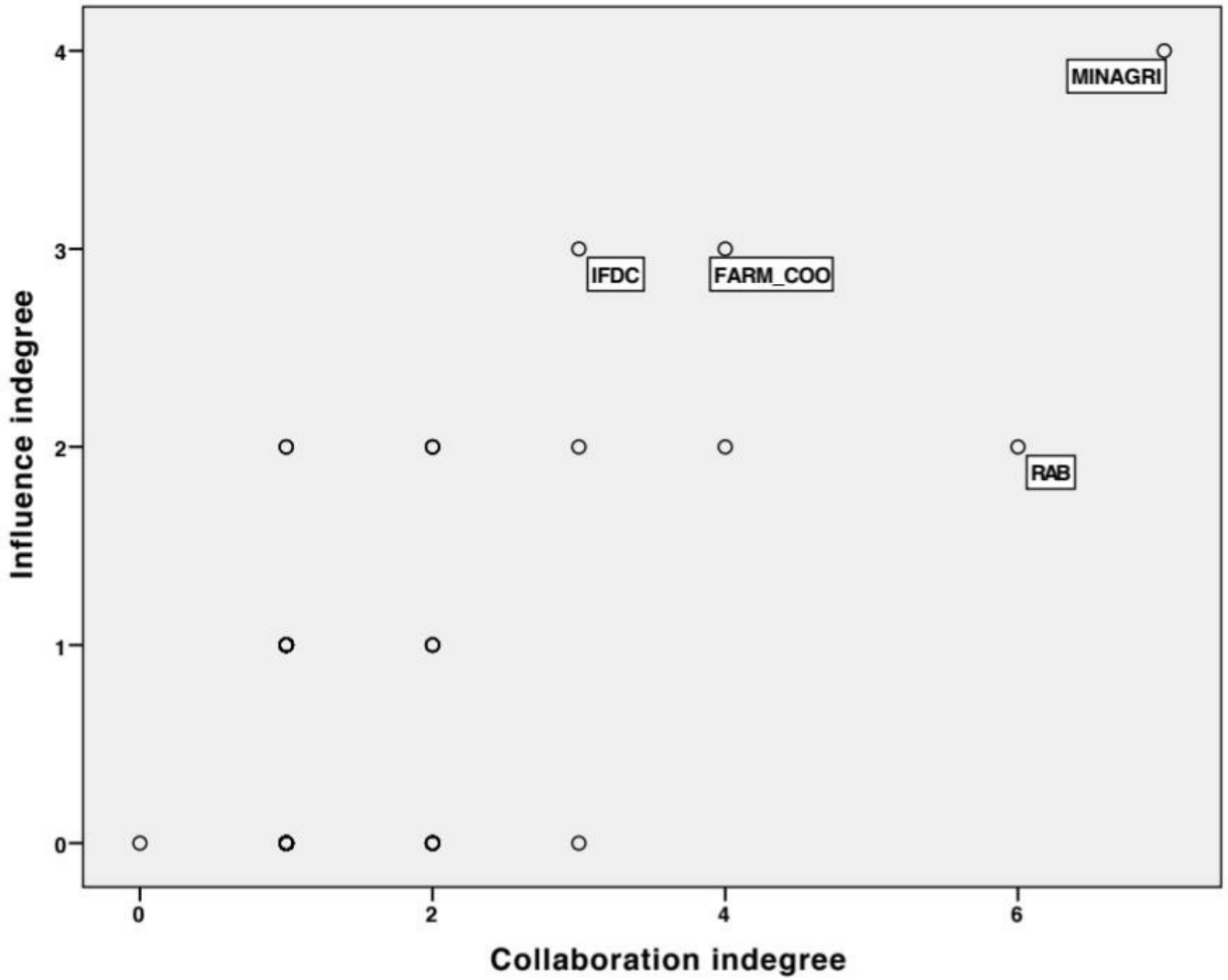
Which actors can contribute to RUNRES objectives?

- Which actors can help RUNRES to have larger impact?

Potential key collaborators in Rwanda



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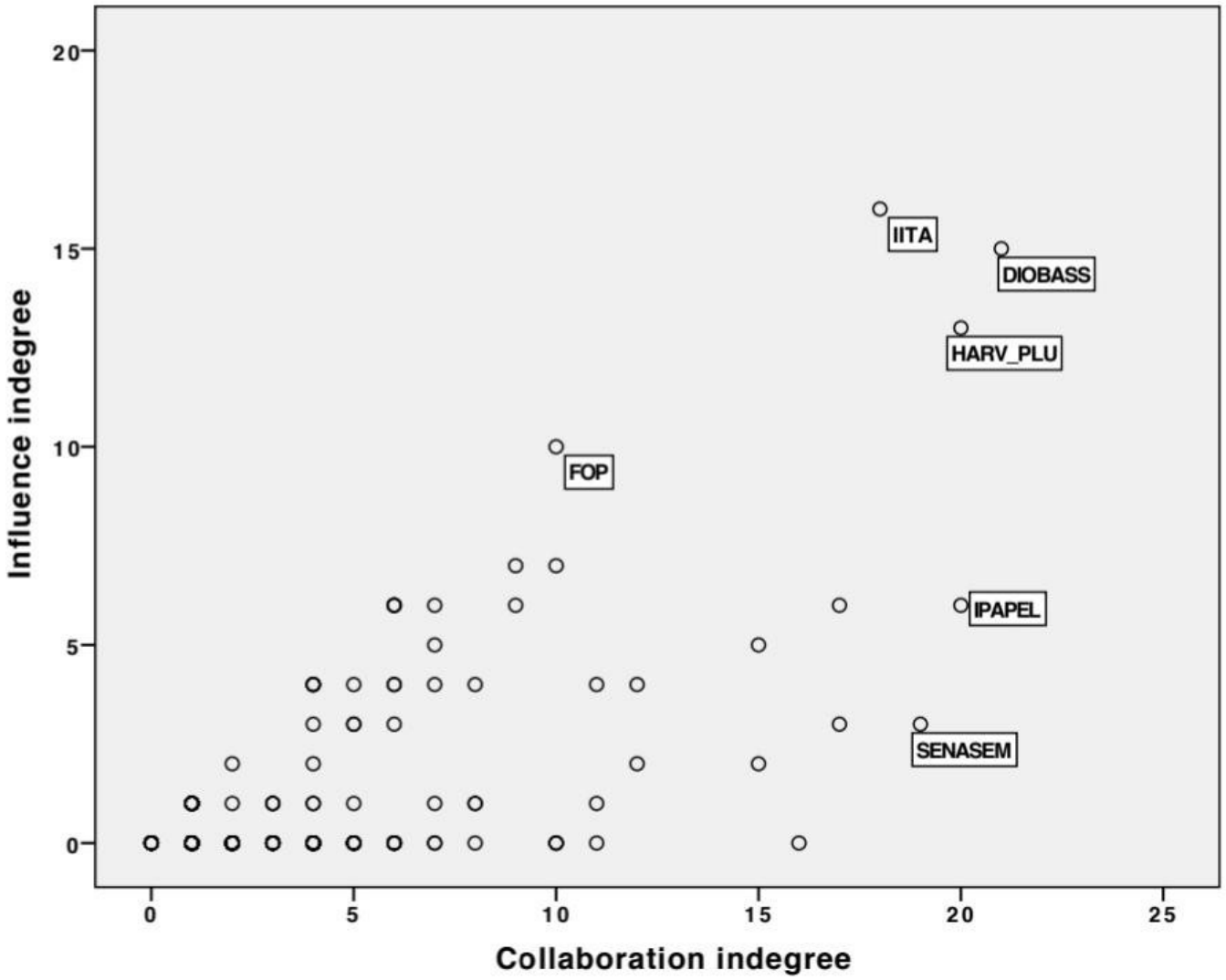
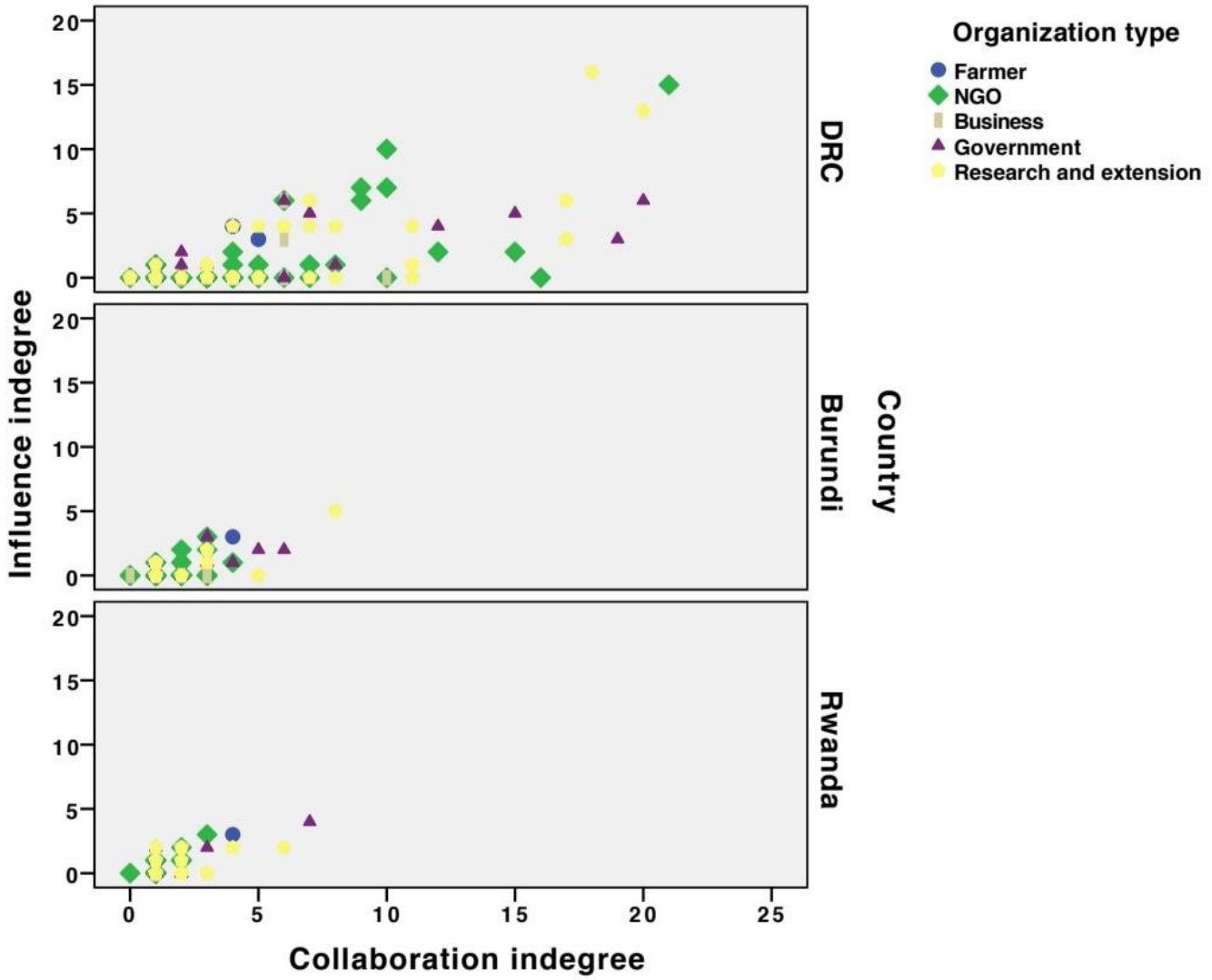


Unpublished, 2018

Which actors can contribute to RUNRES objectives?

- Which <u>type</u> of actors can help RUNRES to have larger impact?

Potential key collaborators in Rwanda and DRC



Unpublished, 2018

Example: Knowledge Management Platform in MD

Social network analysis can provide a scientific answer to the questions of Exercise:

1. Who can help with the establishing a knowledge management platform?

2. Who can not help with establishing a knowledge management platform?

3. How a project needs to engage with
   a. The State Agrarian University of Moldova
   b. ENPARD Moldova – Support to Agriculture and Rural Development (Universitatea Agrară de Stat din Moldova)
   c. Russian State Agrarian University (Российский государственный аграрный университет) and Kuban State Agrarian University кубанский государственный аграрный университет
   d. With publishing houses
   e. With Moldovan young “Geeks” living abroad

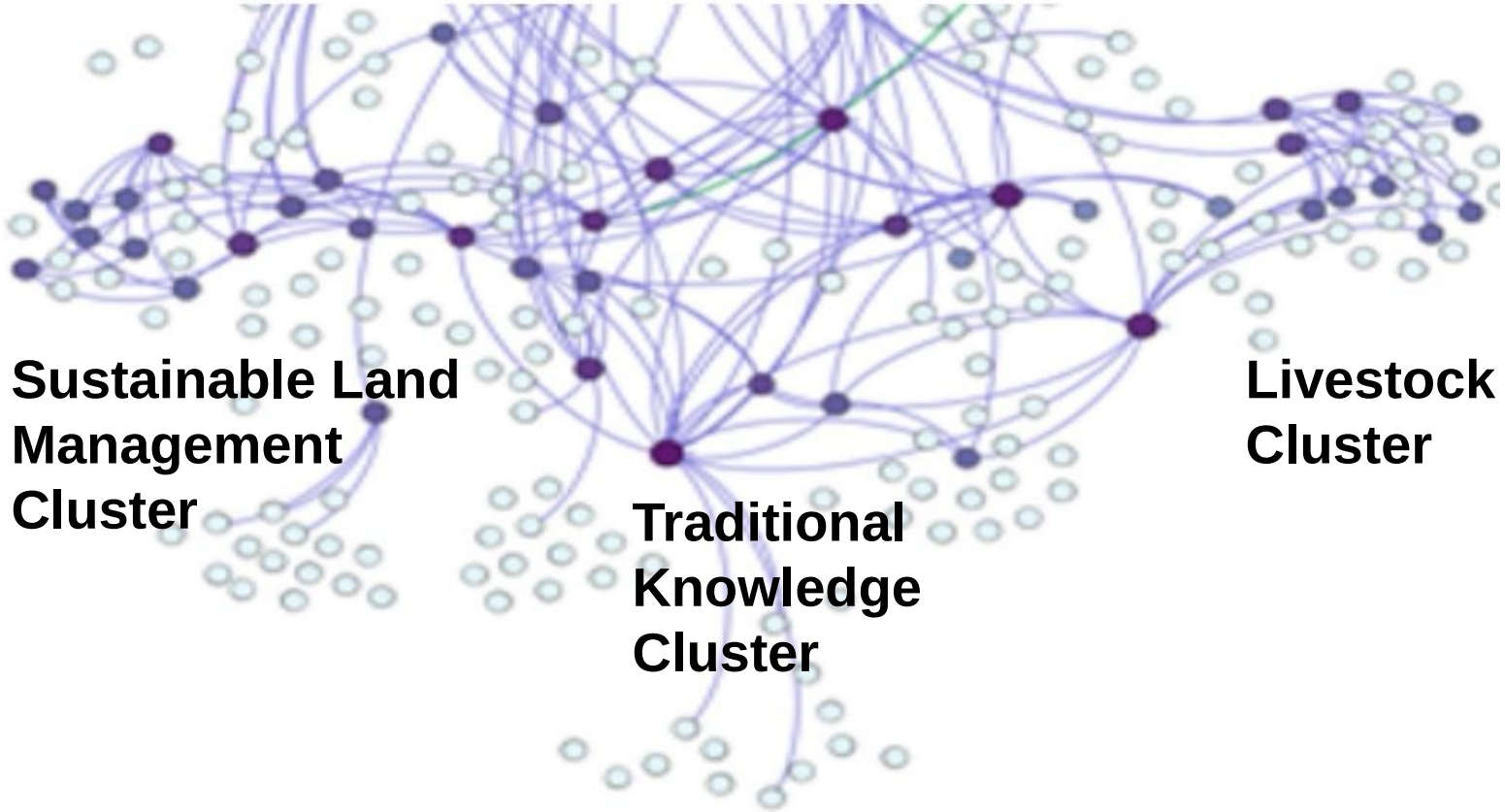
HOW CAN “Bridging Knowledge Creation and Sharing for Natural Resource Management and Climate Resilience”

BENEFIT?

WHAT TO WORK ON?

WHOM TO WORK WITH?

What do you get when you use Social Network Analysis?



Which knowledge management theme should be focused in Moldova?

Whom should we work. With?

What is the best way to. work them?

Knowledge Management Sector in Moldova

HOW TO DO SOCIAL NETWORK ANALYSIS?

Let's do Social Network Analysis - Step 1: Identification of network actors (dots)

Activity 1 (Individual)

1. Please identify the **technical (content) experts** who work on the following sectors in your project area
   a. Traditional Knowledge
   b. Livestock
   c. Sustainable Land Management
2. Please identify **the influential people** (opinion leaders, donors, business people, politicians etc.) who can influence the following sectors in your project area
   a. Traditional Knowledge
   b. Livestock
   c. Sustainable Land Management

Let's do Social Network Analysis - Step 1: Identification of network actors (dots)

Activity 2: (Country group)

1. Who else can do the following in the three major sectors?
    a. Develop feasible (realistic and applicable in the specific context) ideas in knowledge management sector
    b. Make a desktop study to validate that the knowledge management innovations can work in the country context
    c. Design an application model (prototype) for a solution (an innovation) on knowledge management innovations
    d. Test if the application model (prototype) works in controlled environment

Let's do Social Network Analysis - Step 1: Identification of network actors (dots)

Activity 3: (Individual)

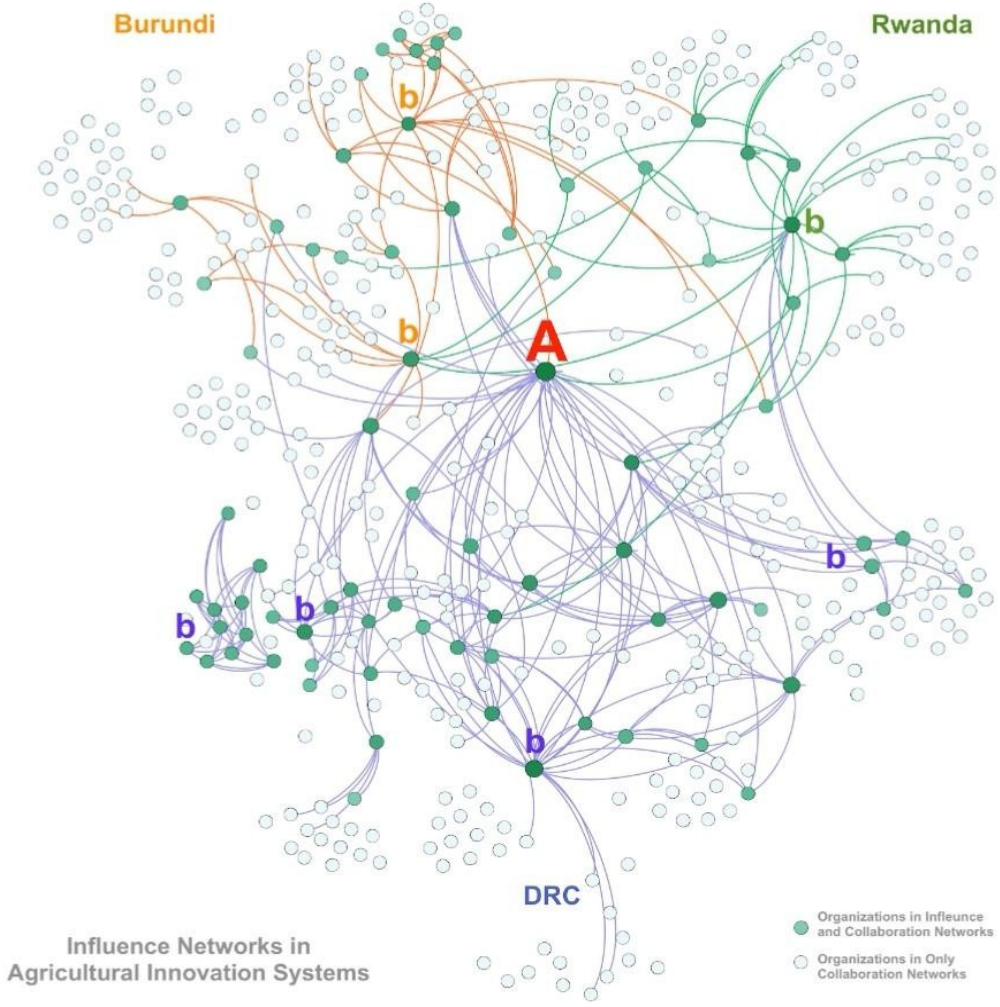
1. Please use the Stakeholder Profile

Let's do Social Network Analysis - Step 2: Identification of network connections (lines)

Activity 1: (Individual)

1. Please name the people (max 5) whom you collaborate on knowledge management topics in the project area
2. Please identify which organizations they work
3. Please select the best options that fits to your collaboration

- Develop feasible (realistic and applicable in the specific context) ideas in knowledge management sector
- Make a desktop study to validate that the knowledge management ideas can work in the country context
- Design an application model (prototype) for a solution (an innovation) on knowledge management innovations
- Test if the application model (prototype) works in controlled environment

Thank you!

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